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## **Environmental Indicators Assessment Report**

**Keystone Steel & Wire Company** 

Peoria, Illinois

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Prepared For

Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641

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## **Executive Summary**

The Keystone Steel & Wire Company facility located in Peoria, Illinois entered into a Administrative Order on Consent with U.S. Environmental Protection Agency Region 5 to perform an Environmental Indicators assessment of its facility. This assessment, required as part of the Government Performance and Results Act, requires that the status of contaminated media at the facility be reviewed to determine if any unacceptable human exposures are present, and to evaluate if physical migration of contaminated groundwater is being controlled.

Keystone has completed a draft Environmental Indicator determination for the facility. This Report documents the history and current status of contamination at Keystone, and provides the rationale used in preparing the required draft *Documentation of Environmental Indicator Determination* forms. Based upon current conditions at the site, Keystone believes that both Current Human Exposures (RCRIS Code CA725) and Migration of Contaminated Groundwater (RCRIS Code CA750) are controlled.

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## Section 1 Introduction

## 1.1 Background

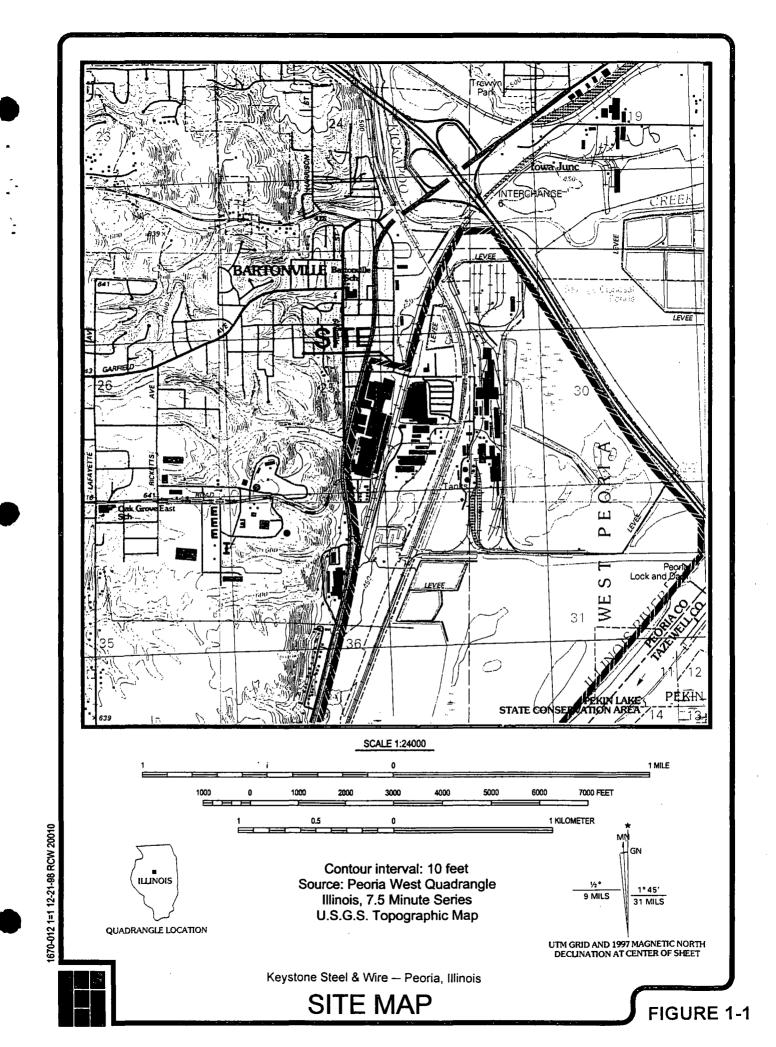
RMT, Inc. has prepared this Environmental Indicators (EI) Assessment Report on behalf of Keystone Steel and Wire Company (Keystone) for its manufacturing facility located in Peoria, Illinois (see Figure 1-1). This Report is being submitted as per requirements established in Section 16 of the December 20, 2000 Administrative Order on Consent (AOC) between Keystone and U.S. Environmental Protection Agency (EPA) Region 5.

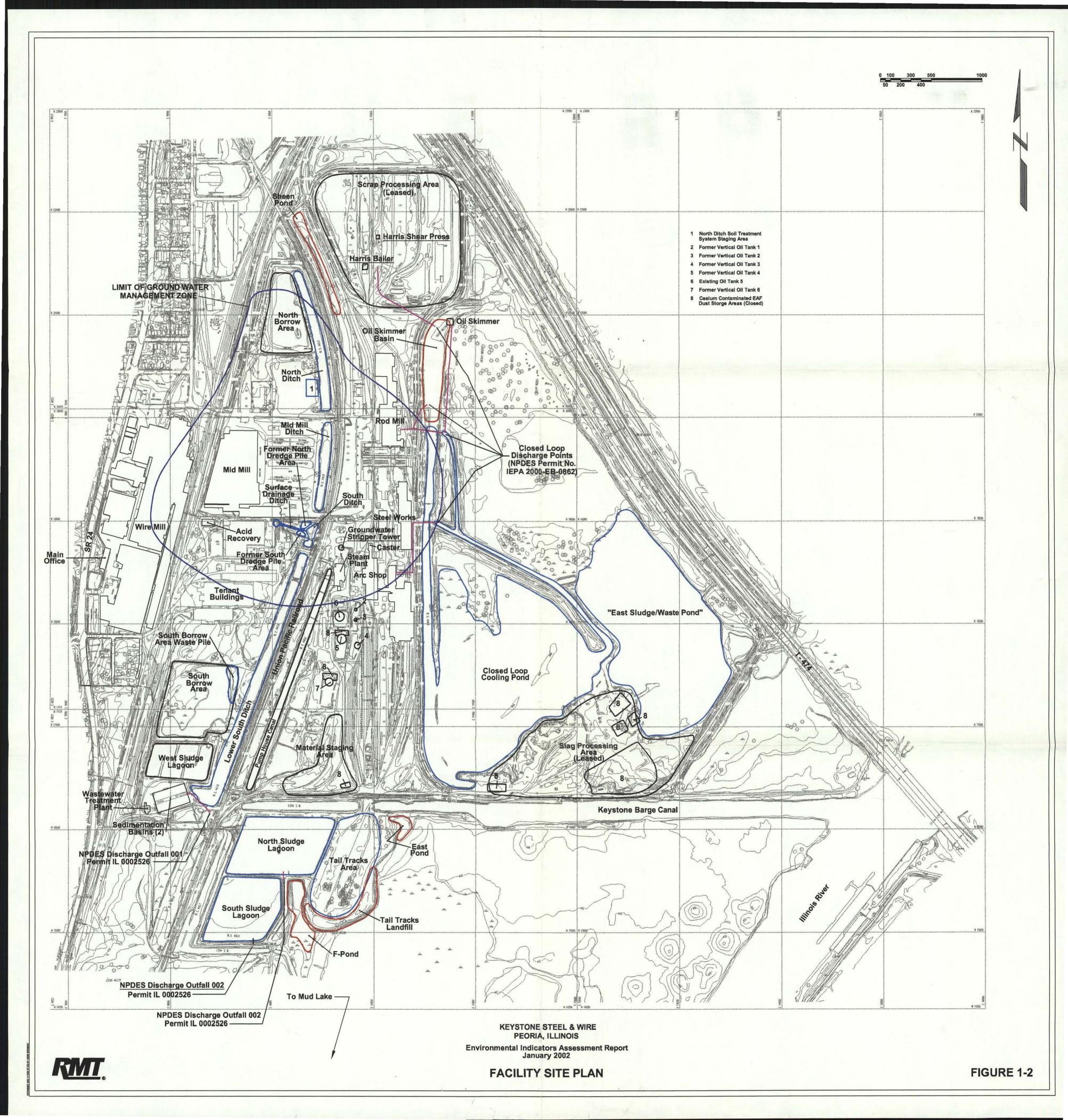
The AOC was established as part of EPA's implementation of the EI program under the Government Performance and Results Act (GPRA), as a follow-up to the original RCRA Facility Assessment (RFA) performed at Keystone in 1987. The 1989 RFA Report identified several areas of potential concern, and five of these areas were targeted for further investigation during an EPA site visit conducted in November 1999. Those five units were specifically listed in the AOC. In late summer 2001, Keystone procured new samples and analytical data at the five units identified as the Sheen Pond, F-Pond, Tail Tracks Landfill, East Pond, and Oil Skimmer Basin. For reference, the areas and units discussed in this Report are shown on a layout map of the Keystone facility (see **Figure 1-2**).

Following the completion of the new investigations, the AOC required Keystone to complete and submit draft EI determinations regarding the status of contaminated media at its Peoria, Illinois facility. Specifically, Keystone was to show that Current Human Exposures (RCRIS Code CA725) and Migration of Contaminated Groundwater (RCRIS Code CA750) are both under control.

## 1.2 Purpose

This Report has been prepared to accompany the two draft EI determination forms, which were used to assess the status of Current Human Exposures and Migration of Contaminated Groundwater at Keystone's Peoria, Illinois facility. The data and rationale used to complete each step in Keystone's EI Determination are compiled herein. The appropriate sections of this report are cross-referenced on Keystone's draft EI forms. Copies of the completed forms entitled "Documentation of Environmental Indicator Determination" for both the Current Human Exposures and Migration of Contaminated Groundwater EIs (RCRIS Codes CA725 and CA750) are also included within this Report (see Appendix A and Appendix B, respectively).





# Section 2 Current Human Exposures Assessment

## 2.1 Data Considered

In order to complete the draft EI determination, Keystone reviewed all of the available historical data included in the 1989 RFA Report, the data collected from various areas during corrective actions undertaken at the site since 1989 under oversight of the Illinois Environmental Protection Agency (IEPA), and newly procured data for the five units listed in the 2000 AOC. In February 2001, Keystone submitted a *Current Conditions Report* to EPA that provided a summary of all of the relevant data available for the site at that time. Since the completion of the *Current Conditions Report*, Keystone has also performed new sampling activities at the Sheen Pond, F-Pond, Tail Tracks Landfill, East Pond, and Oil Skimmer Basin.

Keystone's draft EI determination is based upon the data review performed for the *Current Conditions Report*, and an evaluation of the new data procured in 2001. The *Sampling Report for Environmental Indicators Assessment Investigation* summarizing the results of the investigations conducted at the Sheen Pond, F-Pond, Tail Tracks Landfill, East Pond, and Oil Skimmer Basin to evaluate possible human exposure risks has been compiled as a separate report to be submitted in January 2002 for EPA review. For ease of reference, copies of the analytical data summary sheets presented in the accompanying Sampling Report are included herein at **Appendix C**.

### 2.2 Contaminated Media

Under a Consent Order with the State of Illinois, RCRA corrective action is currently being conducted at Keystone's Peoria facility to deal with a plume of groundwater contaminated with volatile organic compounds (VOCs) and soil and sediment in several units contaminated with metals, as a result of historical operations. Keystone has also investigated contaminated soil, sediment, groundwater, and surface water at the five units listed in the AOC to determine whether any impact by hazardous constituents has occurred in these areas. Media at several other locations at the facility also warrant consideration regarding possible contaminant impact based upon the available historical site data (which were summarized in the February 2001 *Current Conditions Report*). The locations of the areas of potential concern discussed in this section are identified on Figure 1-2.

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## 2.2.1 Units Being Closed Under the Illinois Consent Order

Corrective action to close several ditches and piles of dredged soil and to remediate a plume of contaminated groundwater has been ongoing at Keystone's Peoria, Illinois facility since 1992. Keystone entered into a Consent Order with the State of Illinois to close these units in 1993, and has been working under the supervision of IEPA to implement the closure plan approved under that agreement. Clean closure of several units has been achieved, and activities at several units are still in progress.

(and approved by IEPA under the Illinois Consent Order) in order to control and begin remediation of a plume of contaminated groundwater that extends under most of the Mid Mill, a section of the Steel Works, and a portion of the Wire Mill (see Figure 1-2). The plume contains chlorinated volatile organic compounds, specifically 1,4-dioxane, 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), trans-1,2-DCE, cis-1,2-DCE, tetrachloroethene (PCE), trichloroethylene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), and vinyl chloride. The maximum total volatiles concentrations observed in any well during the quarterly groundwater monitoring sampling conducted in August and November 2001 were 690  $\mu$ g/L and 555  $\mu$ g/L, respectively (*i.e.*, less than 1 part per million (ppm)).

North Ditch Soil Treatment System Staging Area: Following the completion of remedial activity at the North Ditch in 1996, soil testing was conducted in the area used for the soil treatment system after the pad and one foot of underlying soil were excavated. The results of this sampling indicated the presence of concentrations of lead above the clean-closure cleanup objectives (CUOs) in the layer of fill soil overlying the native silty clay. Concentrations ranged from non-detect to 22.0 mg/L TCLP lead and 380 mg/kg to 12,000 mg/kg total lead. Groundwater sampling conducted in the area in 1998 confirmed that no migration of this lead was occurring (allowing clean closure of the adjacent North Ditch to be approved). Closure of this area adjacent to the North Ditch will be coordinated as part of the Illinois Consent Order under IEPA oversight.

South Ditch: Soil, sediment, and groundwater characterization samples were collected from this unit in 2000 so that Keystone could conduct an assessment of possible risk-based closure options in lieu of clean closure. Due to the presence of characteristic hazardous waste (sediment exceeding the toxicity characteristic for lead and/or the reactivity characteristic for sulfide) widely distributed within the sediments of the ditch, excavation of the entire unit will be required. Remedial excavation to achieve in place soil concentrations below Illinois risk-based remedial objectives (ROs) or CUOs is being

planned, and will be coordinated as part of the Illinois Consent Order under IEPA oversight.

Arsenic, chromium, and lead are the major contaminants observed at levels exceeding the applicable ROs in the sediment of the South Ditch. Arsenic was observed at concentrations ranging from 1.0 mg/kg to 343 mg/kg, chromium from 16.8 mg/kg to 2,090 mg/kg, and lead from 8.0 mg/kg to 106,000 mg/kg. Four individual samples from this unit also contained polynuclear aromatic hydrocarbons (PNAs) at concentrations above the Illinois ROs. Shallow groundwater in the area does not appear to have been impacted by the presence of these contaminants, due in part to the low mobility of the metal precipitates bound in the sediment matrix, and also to the low permeability of the native soil (silty clay) that underlies the sediment. Only iron and manganese are routinely detected in the shallow groundwater downgradient of the South Ditch at concentrations above the Illinois ROs. Cadmium was also detected in one historical sample (collected in 1990) above the Illinois groundwater RO but the concentration of this metal has remained well below the limit in all other quarterly samples since 1988.

South Borrow Area Waste Pile: Soil and groundwater characterization samples were collected from this unit in 2000 so that Keystone could conduct an assessment of possible risk-based closure options in lieu of clean closure. Due to the presence of characteristic hazardous waste (soil exceeding the toxicity characteristic for lead, with one sample also exceeding the reactivity characteristic for sulfide) widely distributed within the soil pile, excavation of the entire unit will be required. Remedial excavation to achieve in place soil concentrations below Illinois risk-based ROs or CUOs is being planned, and will be coordinated as part of the Illinois Consent Order under IEPA oversight.

Arsenic and lead are the major contaminants observed at levels exceeding the applicable ROs in the sediment of the South Borrow Area Waste Pile. Arsenic was observed in the sediment at concentrations ranging from 1.5 mg/kg to 73 mg/kg, and lead from 6.2 mg/kg to 35,000 mg/kg. Three individual samples from this unit also contained PNAs at concentrations slightly above the Illinois ROs. Shallow groundwater in the area does not appear to have been impacted by the presence these contaminants, due in part to the low mobility of the metal precipitates bound in the soil matrix. No contaminants have been observed in the shallow groundwater downgradient of the South Borrow Area Waste Pile at concentrations above the Illinois ROs.

Lower South Ditch: Soil, sediment, and groundwater characterization samples were collected from this unit in 2000 so that Keystone could conduct an assessment of possible risk-based closure options in lieu of clean closure. Characteristic hazardous waste

(sediment exceeding the toxicity characteristic for lead) was observed in two samples from this ditch. Targeted remedial excavation to remove hazardous soil and sediment in these two areas is being planned. This approach will allow risk-based closure (using institutional controls and/or engineered barriers where remaining contaminant concentrations exceed ROs) to be applied at the remainder of the ditch. These remedial efforts will be coordinated as part of the Illinois Consent Order under IEPA oversight.

Arsenic, chromium, lead, and mercury are the major contaminants observed at levels exceeding the applicable ROs in the sediment of the Lower South Ditch. Arsenic was observed at concentrations ranging from below detection to 280 mg/kg, chromium from 1.9 mg/kg to 501 mg/kg, lead from 3.6 mg/kg to 24,100 mg/kg, and mercury from below detection to 133 mg/kg. Five individual samples from this unit also contained PNAs at concentrations slightly above the Illinois ROs. Shallow groundwater in the area does not appear to have been impacted by the presence these contaminants, due in part to the low mobility of the metal precipitates bound in the sediment matrix, and also to the low permeability of the native soil (silty clay) that underlies the sediment. Only iron is routinely detected in the shallow groundwater downgradient of the Lower South Ditch at concentrations above the Illinois ROs.

Drainage Ditch, South Dredge Pile, and North Dredge Pile. All three are being closed as part of the Illinois Consent Order, under IEPA oversight. Soil samples were collected from this area in September 2000 at the request of IEPA, in order to obtain additional clean-closure verification data after the remedial excavation action performed in 1996, and also to characterize a lens of stained soil identified in the original closure report.

The results of this additional investigation indicated that in several areas where excavation had been conducted, the clean closure CUOs were not met for lead and cadmium (TCLP objectives of 0.1 mg/L and 0.05 mg/L, respectively). An assessment was then performed to determine if these areas could be closed using risk-based limits. Where clean closure had not been achieved, total lead concentrations ranged from 15 mg/kg to 3,860 mg/kg, and total cadmium concentrations ranged from 8.8 mg/kg to 56 mg/kg. Keystone is coordinating the cleanup of those areas where residual contamination exceeds IEPA risk-based standard, some of which will occur with the remediation of the adjacent South Ditch.

A lens of stained soil (buried below 8 to 10 feet of cover) was left in place at the end of the western end of the Surface Drainage Ditch during remediation in 1996 (to avoid undermining the foundations of a compressed oxygen and nitrogen tank farm and several in-service buried pipelines). Samples from this material collected in 2000

indicated the presence of characteristic hazardous waste (soil exceeding the toxicity characteristic for lead). Total lead concentrations in this lens of stained soil ranged from 128 mg/kg to 29,500 mg/kg. Keystone is currently working with IEPA to revise the closure plan for this area.

## 2.2.2 Units Listed in U.S. EPA AOC

Investigations at the five units listed in the AOC were conducted in late summer and fall of 2001. The results of these investigations are described in the accompanying Sampling Report for Environmental Indicators Assessment Investigation, and the analytical results summary tables have also been included in this report (see Appendix C). A brief summary describing the current status of each of the units is presented below.

Sheen Pond: Groundwater and soil samples collected from this area in 2001 were analyzed for several metals and a polychlorinated biphenyl (PCB) congener detected during the RCRA Facility Assessment (RFA) sampling performed in 1987. No surface water was present in the unit in 1987, and only surface soil samples were collected. None of the analytes detected in 1987 exceeded any of the contaminant-specific U.S. EPA Region 9 Preliminary Remediation Goals (PRGs) for industrial land use.

During the 2001 investigation, again, no surface water was present, but two existing groundwater monitor wells adjacent to the unit were sampled. All of the detected metals concentrations in all of the analytical samples were well below the respective tap water PRGs or Federal drinking water standards (the latter were used to screen results for metals for which no tap water PRGs have been set). PCB was not detected in any of the groundwater samples.

Likewise, in all of the soil samples from the unit, metal concentrations were well below the industrial soil PRGs. Arochlor 1254 was detected, but only at concentrations estimated below the calibration range for the analysis, and well below the industrial PRG. It is worth noting that all of results obtained for the 2001 samples from this unit were also below the residential land use PRGs.

*F-Pond:* Surface water and sediment samples collected from this area in 2001 were analyzed for several metals and volatile organic compounds (VOCs) detected during the 1987 RFA sampling event. The data from 1987 indicated that iron and manganese were present in the surface water above the tap water PRGs, and lead (for which no aqueous PRG has been set) was detected at concentrations above the Federal drinking water standard. The 1987 data also included sediment sample concentrations for cadmium and lead above the industrial soil PRGs.

The 2001 results again detected iron and manganese above the tap water PRGs in one of the two surface water samples, and both samples contained lead (29  $\mu$ g/L to 47  $\mu$ g/L) above the Federal drinking water standard (15  $\mu$ g/L), but well below Keystone's NPDES-permitted discharge limit (200  $\mu$ g/L). TCE was the also detected in one sample at 2  $\mu$ g/L, just barely above the method detection limit and EPA Region 9 tap water PRG of 1.6  $\mu$ g/L. However, the observed concentration in this sample is less than one-half of the Federal drinking water standard for TCE (5  $\mu$ g/L).

In the sediment samples, only lead and iron (a non-hazardous constituent) were detected at concentrations above the industrial PRGs. Iron concentrations in the sediment ranged from 21,000 mg/kg to 140,000 mg/kg, and lead concentrations ranged from 210 mg/kg to 3,100 mg/kg. The concentrations of both of these metals were below the PRGs in the two southernmost samples (closest to the outlet of the F-Pond). The maximum cadmium concentration observed in the seven samples analyzed in 2001 (including one duplicate) was 3.7 mg/kg. VOCs were only detected in one of the sediment samples, and all were at concentrations well below the industrial soil PRGs.

East Pond: Surface water and sediment samples collected from this area in 2001 were analyzed for several metals detected during the 1987 RFA sampling event. The data from 1987 included one sediment sample containing lead at 569 mg/kg, below the industrial PRG (750 mg/kg). None of the five soil samples analyzed in 2001 (including one duplicate) contained metal concentrations above a residential PRG. For example, the lead concentrations from the 2001 sediment samples ranged from 60 mg/kg to 110 mg/kg, which are below the residential PRG of 400 mg/kg for this metal. The three surface water samples (including one duplicate) collected in 2001 exceeded the drinking water standard for lead (with concentrations ranging from 16  $\mu$ g/L to 50  $\mu$ g/L), but all were well below Keystone's NPDES-permitted discharge limit. All of the other metals in the surface water were well below their respective tap water screening levels (PRGs or drinking water standards).

Tail Tracks Landfill: The samples collected from this area during the 1987 RFA sampling event did not contain any constituents at levels significantly above those found in the background samples collected at the time. As per the request for additional investigation in the AOC, Keystone collected soil, groundwater, and surface water samples from the area in 2001. The samples were screened for hazardous constituent metals in electric arc furnace dust (as described in the August 2001 Environmental Indicators Phase 1 Sampling Plan), which is known be contained within the capped landfill.

The soil and groundwater samples were collected at various points below the toe of the landfill cap, and surface water was collected from the current shoreline of Mud Lake, south of the landfill. One of the seven soil samples from the Tail Tracks Landfill area slightly exceeded the industrial PRG for lead (750 mg/kg), exhibiting a lead concentration of 790 mg/kg. None of the other samples contained any metals at concentrations above the industrial PRGs. Residential soil PRGs were only exceeded in one other sample from this area, which contained lead at 690 mg/kg and chromium at 220 mg/kg (compared to the residential PRGs of 400 mg/kg and 210 mg/kg, respectively).

None of the measured metal concentrations in the surface water samples from the shore of Mud Lake or from groundwater at the toe of the landfill cap exceeded any of the established tap water PRGs. Two of the surface water samples and two of the groundwater samples contained lead at concentrations above the Federal drinking water standard (15  $\mu$ g/L), however, none of these concentrations exceeded Keystone's NPDES-permitted discharge limit (200  $\mu$ g/L).

Oil Skimmer Basin: No samples were known to have been collected from the area which is now the Oil Skimmer Basin during the 1987 RFA sampling visit. To investigate possible impact to this area by hazardous constituents, Keystone collected samples of influent water to, groundwater downgradient of, and sediment within the unit. The samples were screened for a variety of metal constituents based upon IEPA's NPDES permit requirements, and included all of the analytes detected elsewhere in the Closed-Loop Cooling Pond system during the RFA. The groundwater samples collected for this investigation were drawn from the five monitor wells downgradient from the entire Closed-Loop Cooling Pond, which are used to monitor compliance with Keystone's NPDES permit for this system (the first part of which is the Oil Skimmer Basin).

The only metal that was detected in any of the influent or groundwater samples for this unit at a concentration above a tap water PRG or Federal drinking water standard was manganese. Concentrations of this non-hazardous metal in the groundwater downgradient from the cooling pond system ranged from 0.71 mg/L to 12 mg/L (the tap water PRG for manganese is 0.88 mg/L). The only metal in the sediment sample from the Oil Skimmer Basin that exceeded the industrial PRG was iron (also a non-hazardous constituent). The high iron content in the sediment of this basin (measured at 460,000 mg/kg) results from the settling of residual iron scale from the contact cooling water that is discharged into the unit.

## 2.2.3 Other Areas of Potential Concern

There are several other areas of the facility from which samples were collected in 1987, or which were discussed in the February 2001 *Current Conditions Report* that must be included in this assessment. Relevant information from the *Current Conditions Report* is summarized herein, and more detailed information can be found in the earlier report. Most of the areas listed in this section have some historical data that indicate the possible presence of contaminated media. A discussion regarding the Waste Solvents Area has been included here in order to clarify its status and to address some concerns raised by EPA Region 5, although no contamination or impact associated with this area is currently known to exist.

North and South Sludge Lagoons: These two settling lagoons are used to dewater and store lime precipitate sludge generated at Keystone's on-site wastewater treatment plant (WWTP). The treatment plant is designed to remove dissolved metals from Keystones wastewater, to meet the effluent discharge limits of the plant's NPDES permit. A sample of the sludge from one of these lagoons collected during the 1987 RFA investigation indicated the presence of iron, lead, and zinc at concentrations (399,000 mg/kg, 4,000 mg/kg, and 286,000 mg/kg, respectively) above the industrial PRGs for soil.

East Sludge/Waste Pond: A part of the historical Illinois river floodplain located to the east of the Closed-Loop Cooling Pond which was isolated by the construction of various levees and I-474A was "named" the East Sludge/Waste Pond in the 1989 RFA Report. Data from this area collected during the 1987 RFA sampling event indicated the presence of lead and chromium in sediment at levels slightly above the industrial PRGs. Lead was observed in the sediment sample collected from the area at a concentration of 1,810 mg/kg, and chromium at a concentration of 529 mg/kg. Although the chromium concentration in the sample from this area is above the 450 mg/kg industrial soil PRG, this limit is based upon the lower carcinogenic exposure risk level (10-6). The chromium concentration in this sample is below the 45,000 mg/kg PRG at the upper carcinogenic risk level (10-4). [Note that the non-cancer PRG for total chromium is greater than the upper carcinogenic PRG.]

Former Vertical Oil Tanks 1, 2, and 3: Soil samples were collected from the secondary containment areas around these tanks during the 1987 RFA sampling event, prior to their removal in the mid-1990s. The 1987 samples indicated the presence of arsenic and lead at levels above industrial soil PRGs. Arsenic was observed at a maximum concentration of 14 mg/kg, which is not statistically different than the IEPA-established, state background soil concentration of 13 mg/kg (the non-carcinogenic industrial PRG

for arsenic is 440 mg/kg and the carcinogenic industrial PRG for lifetime exposure to this metal is 2.7 mg/kg). The maximum lead concentration observed in these areas prior to the tanks being closed was at 847 mg/kg. Removal of the tanks in the 1990s included the excavation and proper disposal of the concrete floors, piping systems, and contaminated soil below and around the tanks. The former secondary containment areas were then backfilled to be level with the surrounding area, and are now plant driveways and railroad spurs. No residual contamination is known exist in these areas.

Former Vertical Oil Tanks 4 and 6: Soil samples were collected from the areas around these two tanks after their removal in 1995 as part of the closure of several temporary cesium-contaminated material storage areas (see Section 5.3 of the February 2001 Current Conditions Report). Closure of these two locations with regard to the removal of the cesium-contaminated material has been approved by IEPA, but residual soil concentrations exceeding industrial PRGs for arsenic (at a maximum of 36 mg/kg) and chromium (at a maximum of 3,300 mg/kg) were observed in the closure-confirmation samples from these areas.

Although the maximum arsenic concentration in the samples from this area is above the 2.7 mg/kg carcinogenic industrial PRG for the lower exposure risk level (10-6), it is significantly below the 440 mg/kg non-carcinogenic industrial PRG and well below the upper carcinogenic risk level (10-4) for industrial soil exposure (270 mg/kg). [Note that the Illinois-established background soil arsenic concentration of 13 mg/kg also exceeds the lower industrial carcinogenic risk level]. In addition, although the chromium concentration in the sample from this area is above the 450 mg/kg industrial soil PRG, this limit is based upon the lower carcinogenic exposure risk level (10-6). The chromium concentration in this sample is below the 45,000 mg/kg PRG at the upper carcinogenic risk level (10-4). [Note that the non-cancer PRG for total chromium is greater than the upper carcinogenic PRG.]

Slag Processing Area: Soil samples were collected from several locations in the current slag processing area in 1995 as part of the closure of several temporary cesium-contaminated material storage areas (see Section 5.3 of the February 2001 Current Conditions Report). Closure of these areas with regard to the removal of the cesium-contaminated (radioactive) material has been approved by IEPA, but residual soil concentrations exceeding industrial PRGs for arsenic (at a maximum of 48 mg/kg), chromium (at a maximum of 5,000 mg/kg), and lead (at a maximum of 20,000 mg/kg) were observed in the closure-confirmation samples. At the slag processing area, these samples were taken at the former ground surface where roll-off boxes and trailers containing cesium-contaminated equipment, dust, and debris had been staged. Since

1995, the former ground surface in the area has been covered with several layers of new compacted slag aggregate.

Steel Works Material Staging Area: This area in the southeast corner of the Steel Works is used for the storage of segregated scrap unloaded from barges, prior to reclamation in the electric arc furnace. Soil samples were collected from this area in 1995 as part of the sampling conducted to confirm the closure of several temporary cesium-contaminated material storage areas (see Section 5.3 of the February 2001 Current Conditions Report). Soil concentrations exceeding industrial PRGs for arsenic (at a maximum of 32 mg/kg) and chromium (at a maximum of 2,200 mg/kg) were observed in the samples from this area. Although the maximum arsenic concentration in the samples from this area is above the 2.7 mg/kg carcinogenic industrial PRG for the lower exposure risk level (10-6), it is significantly below the 440 mg/kg non-carcinogenic industrial PRG and well below the upper carcinogenic risk level (104) for industrial soil exposure (270 mg/kg). [Note that the Illinois-established background soil arsenic concentration of 13 mg/kg also exceeds the lower industrial carcinogenic risk level]. In addition, although the chromium concentration in the sample from this area is above the 450 mg/kg industrial soil PRG, this limit is based upon the lower carcinogenic exposure risk level (10-6). The chromium concentration in this sample is below the 45,000 mg/kg PRG at the upper carcinogenic risk level (104). [Note that the non-cancer PRG for total chromium is greater than the upper carcinogenic PRG.]

Waste Solvents Area: The February 2001 Current Conditions Report included a summary describing a cleanup at Keystone as it was reported in the 1989 RFA report. Cleanup of the area was completed prior to the RFA, and was noted in the RFA report to document a historical remedial action that had been performed at the facility. Keystone has not been able to identify any additional information regarding the exact location of this area, and concern has recently been voiced by EPA Region 5, that this area may have been a possible source of contamination to the GMZ groundwater plume.

The information at hand makes this scenario unlikely, since the waste solvents removed from that area were identified as toluene and xylene (paint thinner) and waste paint, whereas the contaminants in the GMZ are chlorinated solvents. In addition, the location of this "waste solvents area" was identified as having been in the "in the southern portion of the facility," whereas the main concentration of contaminants in the GMZ are located the central and northern areas of the plant.

## 2.2.4 Site-Wide Contaminated Media Summary

Existing site data indicate that groundwater, soil, and sediment are known to be contaminated with organic and/or inorganic constituents above protective risk-based levels. Deep groundwater (greater than 10 feet below ground surface) at the facility is known to be contaminated with several chlorinated organic compounds, forming a plume that is centered in the Mid Mill. Soil and sediment in several RCRA units are known to be contaminated with metals. Surface water and shallow groundwater around known contamination in sediment or soil may reasonably be suspected to be contaminated, however, current site data indicate that these media have not been significantly impacted above appropriately protective risk-based levels.

## 2.2.5 Site-Wide Key Contaminants Summary

Groundwater: A contaminated groundwater plume in the deep (greater than 10 feet below ground surface) aquifer at Keystone contains 1,4-dioxane, 1,1-DCA, 1,1-DCE, trans-1,2-DCE, cis-1,2-DCE, PCE, TCE, 1,1,1-TCA, and vinyl chloride. Shallow groundwater at the site has the potential to be contaminated with metals in the vicinity of the RCRA units undergoing closure, but only the non-hazardous constituents iron and manganese have been detected above their tap water PRGs in this media. Lead (for which no PRG has been established) was observed above its Federal drinking water standard in two shallow groundwater samples near the Tail Tracks Landfill.

Soil and Sediment: Surface soil (<2 ft), deep soil (>2 ft), and sediment in several areas of the facility have been impacted by metals. Key soil and sediment contaminants observed at the site are arsenic, cadmium, chromium, mercury, and lead. These metals are present predominantly in the on-site ditches undergoing RCRA corrective action under IEPA oversight. Some areas have also been shown to contain high concentrations of the non-hazardous constituents iron and zinc (e.g., sludge in the WWTP storage lagoons).

Surface Water: Some surface water at the site has been shown to contain lead at levels above the Federal drinking water standard, however, lead in surface water was never detected above Keystone's NPDES-permitted discharge limit. The non-hazardous constituents iron and manganese have also been observed in some areas above the U.S. EPA Region 9 tap water PRGs.

## 2.3 Exposure Pathways

Construction and operation of the Steel Works and Wire Mill at Keystone began shortly after 1900. The plant began producing steel and wire products, and later (in the 1950's) added the Mid Mill complex, to add wire production capacity. Steel was produced in open hearth furnaces until 1967, when the transition to electric arc furnaces was initiated. The last open hearth furnace was decommissioned in the 1980's, and Keystone now operates two electric arc furnaces (one melting furnace and one refining furnace). All of the areas where contaminated media exist are located within the confines of Keystone's industrial complex, on land that is zoned for industrial use. Operation of the property has been industrial for over 100 years, and its use is anticipated to be industrial for the foreseeable future.

The facility is fenced and entry points are controlled with guard houses manned by security personnel and/or monitored by closed-circuit television. At least three plant security officers and one fire safety officer are on site 24 hours per day, 7 days per week. Security personnel continuously patrol the area in vehicles and/or on foot. The site is not used for habitation, has no full time residents, and does not house any educational, health care, day-care, or playground facilities. No recreational areas are located within the facility boundary, and no growth of crops, grazing of livestock, harvesting of fish or shellfish, etc. occurs on Keystone property.

Based upon the current conditions, potential human receptors at the site are plant workers, construction workers, and trespassers. Engineered barriers that can actively prevent any possible contact between all potential human receptors and all contaminated media do not currently exist at the facility. For the purpose of this assessment, therefore, exposure pathways between all potential human receptors (plant workers, construction workers, and trespassers) and all contaminated media (groundwater, soil, sediment, and surface water) have been conservatively considered to be complete.

## 2.4 Exposure Assessment for Hazardous Constituents

#### 2.4.1 Groundwater

The deep aquifer at the facility has been contaminated by chlorinated organic compounds as a result of past industrial use of chlorinated solvents at the site. The plume is currently being remediated by an on site pump and treat system, which currently employs four purge wells and an air stripper tower. The current extent of the GMZ (as approved by IEPA on October 31, 2000) is shown on Figure 1-2.

The entire extent of the plume is contained on Keystone property. The results of the two most recent quarterly groundwater monitoring events (August and November 2001), indicate that total volatile concentrations throughout the GMZ have been reduced to below 1 ppm. At this time, the concentrations of 1,1,1-TCA and TCE in the plume continue to exceed Illinois Class 1 groundwater standards (*i.e.*, standards for groundwater that can be used as a potable water source), while concentrations of PCE, vinyl chloride, and 1,1-DCE are only occasionally detected above these standards.

There are currently no drinking water wells on Keystone's property, which extends at least ¾ of a mile beyond (downgradient of) the southeast edge of the GMZ to the Illinois River). The area and extent of the plume is currently being reduced due to the action of the pump and treat system. The deep aquifer does not intersect any surface water bodies within the perimeter of the plume, and all purged water is treated through both the air stripper tower, and Keystone's on-site WWTP prior to discharge (in compliance with the facility NPDES permit). Contaminants in the deep aquifer do not pose an on-site health risk through volatilization since organic constituents have not impacted the shallow groundwater above the plume (indicating that the VOCs in the deep aquifer are not migrating upwards).

Plant workers can not be exposed to contaminated groundwater pumped from the purge wells until it has been treated through the air stripper to remove VOCs. The required health and safety plan for operation and control of the GMZ requires proper safety protocols for construction workers whose work could result in direct contact with contaminated groundwater (either through work on the groundwater treatment system itself, or earthwork, drilling, etc. that would extend into the contaminated aquifer). No trespasser exposure to contaminated groundwater is possible since there is no potable use of water generated on site, and no migration to surface water is occurring in any portion of the GMZ.

Shallow groundwater in a remote area of the site (near the Tail Tracks Landfill) contains lead above tap water standards. The concentrations of lead in the two samples which exceed the Federal drinking water standard are below Keystone's NPDES permitted discharge limit, so the potential threat to surface water due to migration of the shallow groundwater is not a concern. Human exposure to this groundwater does not pose a significant risk since, as noted above, no drinking water wells are located at Keystone, and no potable use of any water generated on site is occurring. In addition, any incidental exposure to shallow groundwater that could occur on site (to plant workers, construction workers, or trespassers) does not pose a significant risk beyond that which exists for process water, wastewater, or treated effluent at or from the facility.

Based upon the current conditions at the site, as outlined in the discussion above, plausible human exposures to groundwater contamination are controlled.

## 2.4.2 Surface Water

Surface water in several remote areas of the site (East Pond, F-Pond, and Tail Tracks Landfill Area) contains lead above the Federal drinking water standard. All of the observed lead concentrations from these areas are below Keystone's NPDES permitted discharge limit and, therefore, are not a concern for possible off-site transport. Human exposure to these metals does not pose a significant risk since no potable use of any water generated at Keystone is occurring. In addition, any incidental exposure to surface water that could occur on site (to plant workers, construction workers, or trespassers) does not pose a significant risk beyond that which exists for process water, wastewater, or treated effluent at or from the facility.

Based upon the current conditions at the site, as outlined in the discussion above, plausible human exposures to surface water contamination are controlled.

## 2.4.3 Sediment and Soil

Units Being Closed Under the Illinois Consent Order: Sediment and soil in the North Ditch Soil Treatment System Staging Area, South Ditch, South Borrow Area Waste Pile, Lower South Ditch, and Surface Drainage Ditch Area are known to be contaminated above relevant action levels and are undergoing RCRA corrective action as per a Consent Order with the State of Illinois. The primary contaminant impacting all of these units is lead, and most of the units are also contaminated with one or more of the following: arsenic, cadmium, chromium, and/or mercury.

A health and safety plan was implemented as part of the original IEPA-approved closure plan to ensure that proper personnel protection would be utilized during closure activities. Keystone requires that contractors prepare and implement task-specific health and safety plans whenever work is to be performed in and around the restricted areas on site. These safety protocols ensure that plant worker and construction worker (including sampling crews, remediation contractors, etc.) exposure to contaminated soil and sediment is controlled.

All of these units are distanced from main manufacturing areas at the facility and worker presence in these areas is typically limited to inspections by maintenance personnel and engineering staff. Plant and construction worker exposure to the contaminated soil and sediment in these units (that could result in ingestion or

inhalation through direct contact) is not significant since work in these areas is limited, proper health and safety protocols are in place to limit worker exposure, and water and vegetative covers over the impacted media minimize the threat of incidental contact. Plant security (guard houses, patrols, etc.), fencing, the relatively continuous presence of plant employees, and otherwise restricted access to these units via plant roads in the Mid Mill (in the center of Keystone's industrial complex), also ensure that the risk of exposure to trespassers is controlled.

U.S. EPA AOC-Referenced Units: Soil at the toe of the Tail Tracks Landfill and sediment in the F-Pond were observed to contain lead at concentrations exceeding the industrial PRG of 750 mg/kg for this metal. Both of these (adjacent) areas are located in a very remote area of the facility, well removed from any current plant activities. Water and/or vegetative cover in these areas also provide protection against incidental contact with the impacted sediment and soil. No construction actions are currently planned or anticipated in these areas, and Keystone will require a health and safety plan for the protection of plant or contractor employees for any investigations, etc. to be carried out in the area (as is standard practice at the facility). Plant security (guard houses, patrols, etc.), fencing, and the general inaccessibility of the area (the most direct route to which requires passage through the heart of the Steel Works complex) ensures that the risk of exposure to trespassers is controlled.

Other Areas: Some sediment in North and South Sludge Lagoons contains lead exceeding the industrial PRG. Lead was observed at 4,000 mg/kg in one sample collected in 1987 during the RFA. These two lagoons are individually fenced, are located in a remote area of the facility (adjacent to the Tail Tracks Area), isolated from normal plant activities, and are components of Keystone's NPDES-permitted wastewater treatment process. Exposure to the settled sludge in these lagoons by plant workers, construction crews, contractors, etc. are be controlled by Keystone's WWTP standard operating procedures, and health and safety protocols. Plant security (guard houses, patrols, etc.), fencing, and the general inaccessibility of the area (the most direct route to which requires passage through the wastewater treatment plant) ensures that the risk of exposure to trespassers is controlled.

Soil in several of the samples from the slag yard where some containers containing radioactive mixed waste had been staged were found to contain arsenic and lead above the industrial PRGs. Since 1995 when these samples were collected, the former ground surface in the former storage areas has been backfilled several times with layers of compacted slag aggregate. Therefore, employees who may occasionally visit this part of the slag yard cannot be exposed by direct or incidental contact to the soil from the

former ground surface. In addition, no construction that could expose workers to the former ground surface is currently planned in the area. Access to this area of the Steel Works by trespassers is unlikely due to plant security measures, and in any case, the possibility of incidental contact is precluded by the presence of the compacted aggregate cover.

A sediment sample from the area east of the Closed-Loop Cooling Pond that was called the East Sludge/Waste Pond in the 1989 RFA report contained lead at 1,810 mg/kg, above the 750 mg/kg industrial soil PRG. This area is located in a remote part of the facility, beyond the eastern levee of the cooling pond. No industrial activities occur in, or are planned in the area, so exposure by plant workers, construction crews, contractors, etc. are controlled, since no direct contact to this sediment is currently occurring (nor is such contact anticipated). Plant security and the general inaccessibility of the area control access by trespassers.

Overall Sediment and Soil Exposure Assessment: Based upon the current conditions at the site, as outlined in the discussion above, plausible human exposures to soil and sediment contamination are controlled.

### 2.4.4 Air

Although direct contamination of air is not occurring at the facility, migration of hazardous constituents into the air from media on site that is contaminated above health-based risk levels is plausible. However, the potential for migration to air is limited by site conditions, and the available analytical data indicate that indirect exposure to hazardous constituents via air does not present an unacceptable health risk at the site.

Organic contaminants in the GMZ are contained in the deep aquifer and upward migration through volatilization is not significant since these contaminants have not been observed in shallow groundwater above the plume. The risk of migration of inorganic soil and sediment contaminants to air is minimal at Keystone, due to site conditions. Impacted areas are located in inactive parts of the facility (not associated with normal daily operations or regularly occupied by employees), are not subject to regular vehicle traffic, and/or are covered with water, soil, or vegetation.

Industrial hygiene data collected at the facility also confirms that inorganic hazardous constituents from contaminated soil on site are not posing an airborne health threat to workers. Keystone annually collects approximately 200 personal air monitoring samples in compliance with OSHA's general industry Lead and Cadmium Exposure Standards.

Employees in job classifications with the potential for lead or cadmium exposure are outfitted with portable air samplers that are then worn through a normal work shift. The samples from these units are screened for metals (including arsenic, chromium, and lead) to ensure that worker exposures are below the OSHA Permissible Exposure Levels (PELs). No industrial hygiene sample outside of a process area with a known (attributable) air contaminant source has ever recorded a concentration above ½ the Threshold Limit Value (TLV) for any metal. [Note that TLVs are at least as stringent, and are typically more stringent than the respective PELs.]

Based upon the current conditions at the site, as outlined in the discussion above, plausible human exposures to potential air contamination as a result of releases from impacted soil, sediment, and groundwater are controlled.

## 2.5 Current Human Exposures Under Control (CA725)

Based upon the current conditions at Keystone, exposures to hazardous constituents present in soil, sediment, ground water, or surface water are not reasonably expected to be significant (*i.e.*, are not unacceptable). All contamination at the facility is either below acceptable levels (*e.g.*, U.S. EPA Region 9 Preliminary Remediation Goals) or the potential exposure intensity, frequency, and/or duration are controlled at levels well below those assumed in the derivation of the PRGs, due to the current site conditions.

## **Section 3**

## **Current Human Exposures Assessment**

## 3.1 Data Considered

In order to complete this EI determination, Keystone reviewed all of the historical data collected during the groundwater investigations and quarterly monitoring events conducted prior to, and under the 1993 Consent Order with the State of Illinois. Regular groundwater monitoring activities have been conducted at the facility since at least 1987. Additional groundwater data collected in 2001 as per the U.S. EPA Region 5 AOC was also considered.

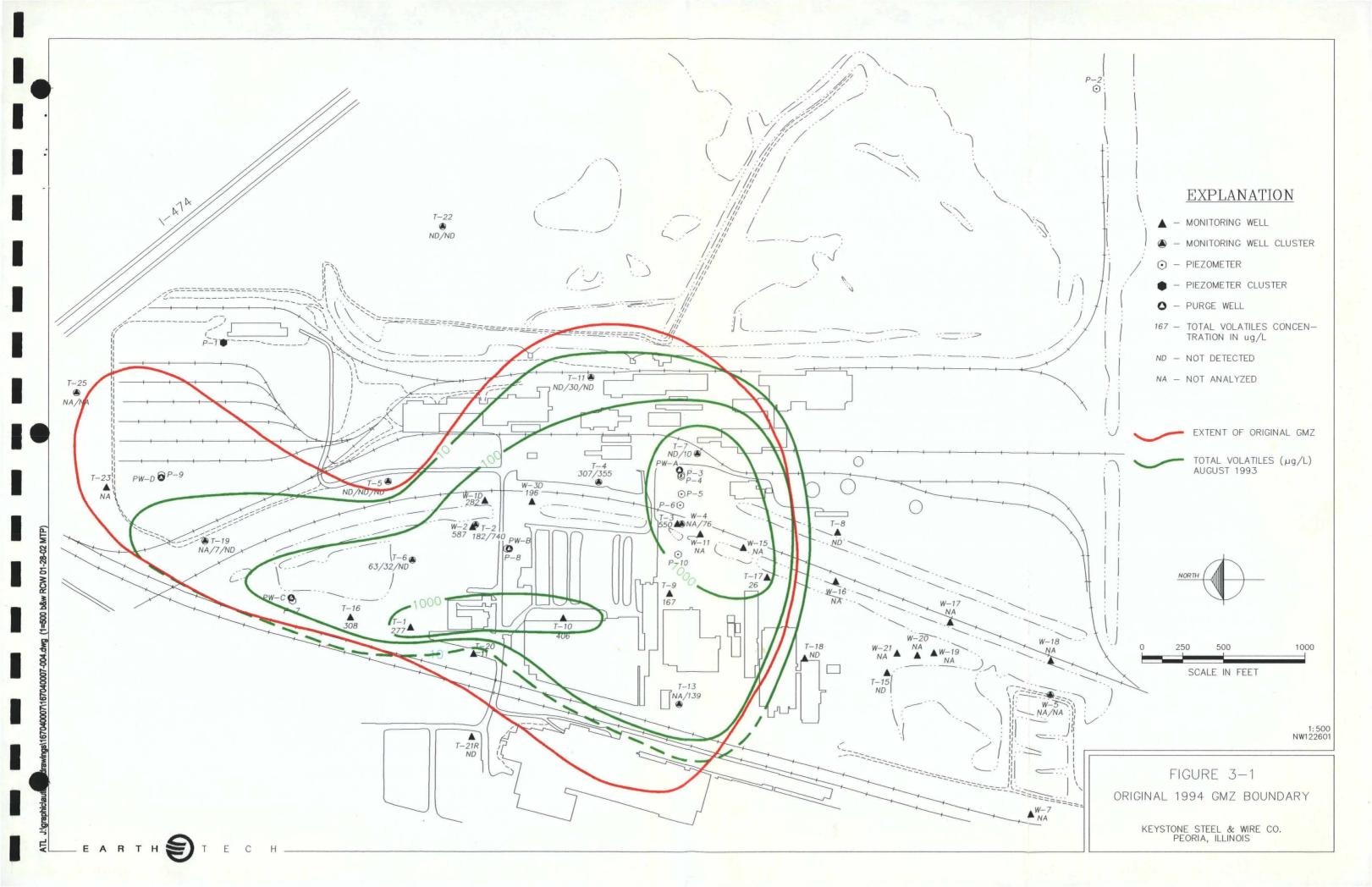
## 3.2 Groundwater Contamination

A contaminated groundwater plume in the deep (greater than 10 feet below ground surface) aquifer at Keystone contains 1,4-dioxane, 1,1-DCA, 1,1-DCE, trans-1,2-DCE, cis-1,2-DCE, PCE, TCE, 1,1,1-TCA, and vinyl chloride. Currently, only TCE and 1,1,1-TCA are observed at concentrations exceeding federal drinking water standards. This plume was delineated as required under the Illinois Consent Order, and Keystone's Groundwater Management Zone (GMZ) was established by IEPA in April 1994 as part of the initial effort to control and remediate the impacted area. The original size and extent of the GMZ, delineating the area of contaminated groundwater impact is shown on Figure 3-1.

Shallow groundwater at the site has the potential to be contaminated with metals in the vicinity of several RCRA units undergoing closure under IEPA oversight, but only the non-hazardous constituents iron and manganese have been detected above their tap water PRGs in this media. Keystone has been collecting quarterly groundwater samples from the shallow groundwater in vicinity of these units since 1988. Lead was observed above its Federal drinking water standard during sampling in 2001 in two shallow groundwater samples near the Tail Tracks Landfill Area, but at concentrations below Keystone's NPDES permitted discharge limit.

## 3.3 Groundwater Management Zone (GMZ) Status

The contaminated groundwater plume in the GMZ as originally defined was centered in the Mid Mill and extended underneath some of the Wire Mill and Steel Works segments of the plant. The entire plume was, and continues to be contained on Keystone property. The groundwater remedial action plan for the facility includes groundwater capture using a network of recovery wells, treatment of recovered groundwater using air stripping, use of



treated groundwater as process water in the Mid Mill wire production plant, and final treatment of the process water through Keystone's on-site WWTP prior to discharge (as per the facility's NPDES permit).

## 3.3.1 Contaminated Groundwater Remediation Activities

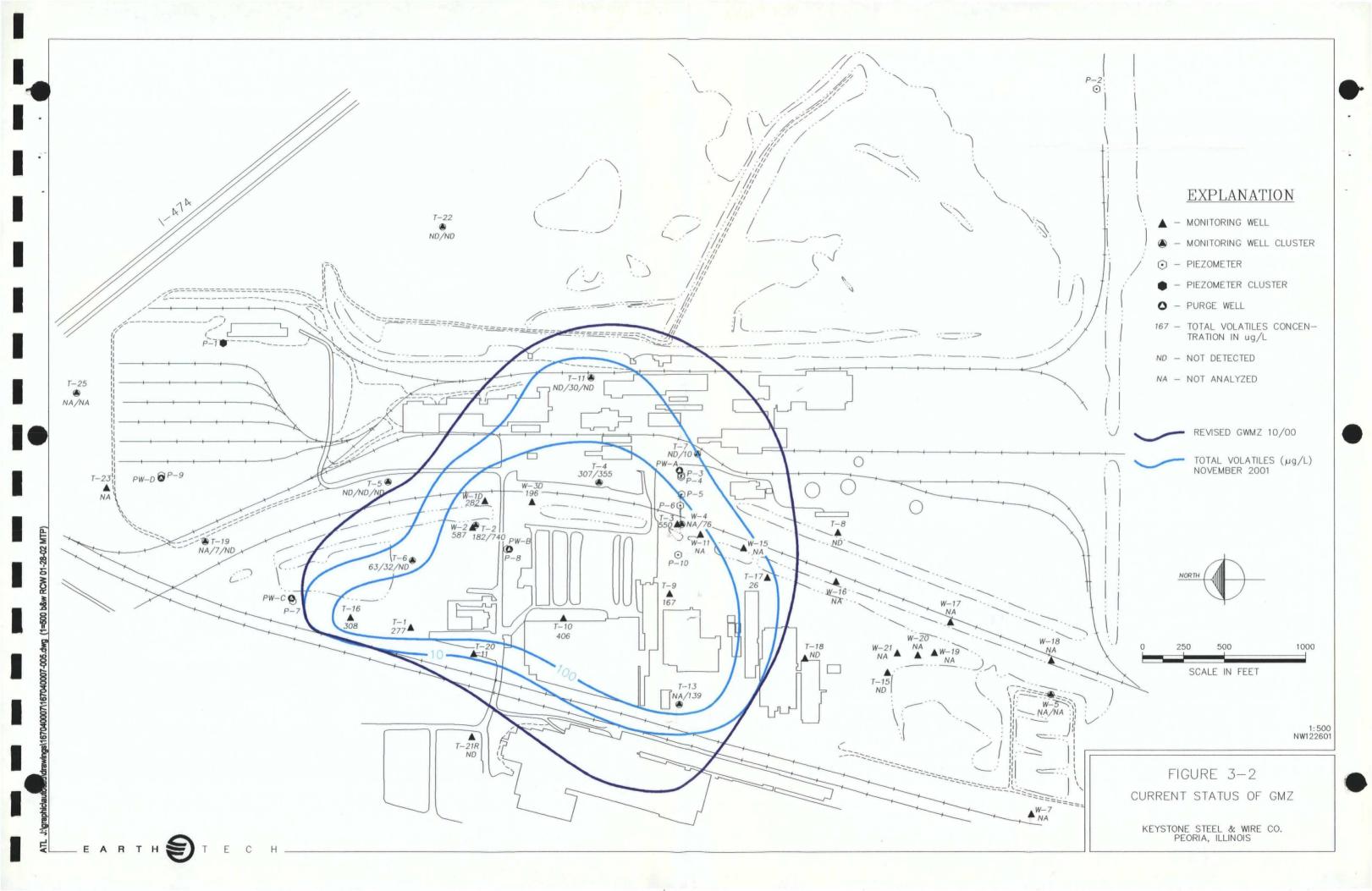
The groundwater capture and management system currently consists of four purge wells that are operated simultaneously and used to prevent further migration of contaminants, and remediate the impacted area. The locations of these wells (designated as PW-A, PW-B, PW-C, and PW-D) are shown on Figure 3-1. The approximate pumping rates of the four wells are 50, 100, 40, and 400 gallons per minute (gpm), respectively. A large depression has been created in the piezometric surface of the deep aquifer due to the operation of these purge wells, and all groundwater flow directions within the GMZ are towards one of the four wells.

Quarterly groundwater monitoring is performed in accordance with Keystone's Groundwater Remediation Program (initiated in 1992) to monitor the status of the contaminants and to evaluate the effectiveness of the groundwater remediation system. Construction of the pump and treat system began in 1993 and operation of the system began in 1994. Approximately 200 to 300 million gallons of groundwater are processed by the system annually. By the end of 2001, over two billion gallons of water had been purged from the GMZ and treated through the air stripper tower.

### 3.3.2 Current Extent of Contaminated Groundwater Plume

Operation of the purge wells has stabilized the plume and reduced both the area (extent) and concentrations of contaminants within the GMZ. There is no threat of further migration of the plume, as it has been substantially reduced in size since 1994, and contaminant concentrations have decreased significantly. Keystone submitted a *Groundwater Management Zone Status Report* to IEPA in August 2000 documenting the reduction in size and contaminant concentrations in the remaining plume. As a result of the documented effect of the groundwater remediation program, IEPA approved a new, smaller boundary for the GMZ in October 2000. The current extent and status of the GMZ and the contaminant plume is shown on Figure 3-2.

The results of the two most recent quarterly groundwater monitoring events (August and November 2001), indicate that total volatile concentrations throughout the GMZ have been reduced to below 1 ppm. A trend analysis of the GMZ data (presented to IEPA in Keystone's 2001 Annual Summary Report on the Groundwater Remediation System)



indicated that operation of the pump and treat system has caused statistically significant decreases in VOC concentrations in most of the GMZ monitor wells. It is also important to note that the  $10~\mu g/L$  total volatiles isopleth shown on Figure 3-2 is surrounded by wells in which no VOCs were detected above the detection limit of  $5~\mu g/L$ . The vertical extent of contamination is bounded by the presence of shale bedrock below the contaminated groundwater aquifer.

## 3.3.3 Surface Water Exposure to Contaminated Groundwater

The deep aquifer containing the contaminated groundwater plume does not intersect any surface water bodies within the perimeter of the GMZ, nor anywhere on Keystone property. All water produced from the purge wells is treated through both the air stripper tower and Keystone's on-site WWTP prior to discharge in compliance with the facility's NPDES permit. The volatile organic contaminants have remained confined in the deep aquifer and are not migrating upwards since organic constituents have not impacted the shallow groundwater above the plume.

## 3.4 Ongoing Groundwater Management Activities

Keystone is required to continue implementation of the approved Groundwater Remediation Program under the Consent Order with IEPA until such time as all contaminant concentrations within the GMZ are shown to comply with Illinois' Class I groundwater standards. Operation of the four purge wells will continue until IEPA approves closure of the GMZ or otherwise authorizes discontinuation of pumping from any purge well. Plans are also being prepared to add a fifth purge well near the current center of the plume (to be designated PW-E) to speed contaminant reduction in the GMZ. The proposed location of this new purge well is indicated on Figure 3-2.

## 3.5 Migration of Contaminated Groundwater Under Control (CA750)

Groundwater remediation measures currently being performed at Keystone are controlling the physical migration of contaminated groundwater at the site. Historical monitoring data for the GMZ indicate that the plume containing volatile organics has been stabilized, and is in fact shrinking. Contaminated groundwater is expected to remain within the existing area of impact because Keystone must continue operating the existing pump and treat system (and performing quarterly groundwater monitoring to confirm the status of the plume) as required under the IEPA Consent Order.

## Section 4 Conclusions

Keystone has completed a draft Environmental Indicator determination for its Peoria, Illinois facility. This Report document documents the history and current status of contamination at the Keystone, and provides the rationale used in preparing the draft *Documentation of Environmental Indicator Determination* forms in **Appendix A** and **Appendix B**. Based upon current conditions at the site, Keystone believes that both Current Human Exposures (RCRIS Code CA725) and Migration of Contaminated Groundwater (RCRIS Code CA750) are controlled.

# Appendix A Environmental Indicators Form CA725

# Current Human Exposures Under Control

### DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99 (Facility-Completed Draft)

## RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725)

### **Current Human Exposures Under Control**

Facility Name:	Keystone Steel & Wire Company
Facility Address:	7000 S.W. Adams Street, Peoria, Illinois 61641
Facility EPA ID #:	ILD 000 714 881
groundwater, surfa Management Unit this EI determinate  If	elevant/significant information on known and reasonably suspected releases to soil, ace water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste s (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in son?  yes - check here and continue with #2 below.  no - re-evaluate existing data, or  data are not available skip to #6 and enter IN (more information needed) status code.

### **BACKGROUND**

### Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

#### **Definition of Current Human Exposures Under Control EI**

A positive Current Human Exposures Under Control EI determination (YE status code) indicates that there are no unacceptable human exposures to contamination (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all contamination subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

#### Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The Current Human Exposures Under Control EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

## **Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

## Current Human Exposures Under Control Environmental Indicator (EI) RCRIS code (CA725)

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Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be

(Facility-Completed Draft)

	Yes	<u>No</u>	?	Rationale / Key Contaminants
Groundwater				See reference below
Air (indoors) <sup>2</sup>		✓_		See reference below
Surface Soil (e.g., <2 ft)	<del>\frac{\frac}}}}}}{\frac}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}{\frac{\frac{\frac{\frac{\frac</del>			See reference below
Surface Water	<u>✓</u>			See reference below
Sediment	<u> </u>			See reference below
Subsurf. Soil (e.g., >2 ft	) 🗹			See reference below
Air (outdoors)		<u> </u>		See reference below
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## Footnotes:

2.

- Contamination and contaminated describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based levels (for the media, that identify risks within the acceptable risk range).
- Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

## Current Human Exposures Under Control Environmental Indicator (EI) RCRIS code (CA725)

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3. Are there complete pathways between contamination and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions? Summary Exposure Pathway Evaluation Table Potential Human Receptors (Under Current Conditions) Residents Workers Day-Care Construction Trespassers Recreation Food<sup>3</sup> Contaminated Media Groundwater <u>no</u> <u>ves</u> <u>no</u> <u>yes</u> no Air (indoors) Soil (surface, e.g., <2 ft) <u>ves</u> no yes no no no yes Surface Water <u>no</u> \_yes yes \_no\_ <u>no</u> Sediment <u>no</u> yes yes <u>no</u> no\_ Soil (subsurface e.g., >2 ft) <u>no</u> Air (outdoors) Instructions for Summary Exposure Pathway Evaluation Table: 1. Strike-out specific Media including Human Receptors spaces for Media which are not contaminated) as identified in #2 above. 2. Enter yes or no for potential completeness under each Contaminated Media -- Human Receptor combination (Pathway). Note: In order to focus the evaluation to the most probable combinations some potential Contaminated Media - Human Receptor combinations (Pathways) do not have check spaces ( \_\_\_\_ ). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary. If no (pathways are not complete for any contaminated media-receptor combination) skip to #6, and enter YE status code, after explaining and/or referencing condition(s) inplace, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways). If yes (pathways are complete for any Contaminated Media - Human Receptor combination) - continue after providing supporting explanation. If unknown (for any Contaminated Media - Human Receptor combination) - skip to #6 and enter IN status code Rationale and Reference(s): \_\_\_\_ See Section 2.3 of the accompanying Environmental Indicators Assessment Report --

<sup>&</sup>lt;sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

## Current Human Exposures Under Control Environmental Indicator (EI) RCRIS code (CA725)

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(Facility-Completed Draft)

in magnitude (in (used to identify low) and contam	, potentially unacceptable because exposures can be reasonably expected to be: 1) greatensity, frequency and/or duration) than assumed in the derivation of the acceptable let the contamination); or 2) the combination of exposure magnitude (perhaps even thoughinant concentrations (which may be substantially above the acceptable levels) could receptable risks)?
	If no (exposures can not be reasonably expected to be significant (i.e., potentially unacceptable) for any complete exposure pathway) - skip to #6 and enter YE status of after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to contamination (identified in #3) are not expected significant.
	If yes (exposures could be reasonably expected to be significant (i.e., potentially unacceptable) for any complete exposure pathway) - continue after providing a description (of each potentially unacceptable exposure pathway) and explaining and referencing documentation justifying why the exposures (from each of the remaining complete pathways) to contamination (identified in #3) are not expected to be significant.
	If unknown (for any complete pathway) - skip to #6 and enter IN status code
Rationale and Re	If unknown (for any complete pathway) - skip to #6 and enter IN status code  eference(s): See Section 2.4 of the accompanying Environmental  Indicators Assessment Report
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
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Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>
Rationale and Re	eference(s): See <b>Section 2.4</b> of the accompanying <i>Environmental</i>

<sup>&</sup>lt;sup>4</sup> If there is any question on whether the identified exposures are significant (i.e., potentially unacceptable) consult a human health Risk Assessment specialist with appropriate education, training and experience.

## Current Human Exposures Under Control Environmental Indicator (EI) RCRIS code (CA725) Page 5

5

(Facility-Completed Draft)

	If yes (all significant exposures have been shown to be within acceptable limits) - continue and enter YE after summarizing <u>and</u> referencing documentation justifying why all significant exposures to contamination are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
	If no (there are current exposures that can be reasonably expected to be unacceptable)-continue and enter NO status code after providing a description of each potentially unacceptable exposure.
	If unknown (for any potentially unacceptable exposure) - continue and enter IN status code
Rationale and De	ference(s): — Not Applicable
Rationale and Re	referee(s). Not Applicable
	·
	·
	·
	·

#### Current Human Exposures Under Control Environmental Indicator (EI) RCRIS code (CA725)

Page 6

(Facility-Completed Draft)

6.	(CA725), and ol	priate RCRIS status codes for the Current Human otain Supervisor (or appropriate Manager) signatur opriate supporting documentation as well as a map	re and date on the EI determination below				
	YE - Yes, Current Human Exposures Under Control has been verified. Based on a review of the information contained in this EI Determination, Current Human Exposures are expected to be Under Control at the <u>Keystone Steel &amp; Wire Company</u> facility, EPA ID # <u>ILD 000 714 881</u> , located at <u>Peoria, Illinois</u> under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.						
		NO - Current Human Exposures are NOT Unde	er Control.				
		IN - More information is needed to make a det	termination.				
	Completed by	** Facility Prepared Draft **  ** Keystone Steel & Wire Company **  ** EPA ID #: ILD 000 714 881 **	Date <u>January 2002</u>				
	Supervisor	(signature) (print) (title) (EPA Region or State)	Date				
	Locations where	References may be found:					
	<u>determ</u> submit Februa	vironmental Indicators Assessment Report accompa- nination submittal. Also refer to the Current Condit- ted by Keystone Steel & Wire Company to U.S. EP/ ry 2001, and the RCRA Facility Assessment Report f & Eddy (under contract with U.S. EPA Region 5).	tions Report A Region 5 in prepared in 1989 by				
	Facility Contact,	telephone number, and e-mail address:					

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

## Appendix B Environmental Indicators Form CA750

Migration of Contaminated Groundwater
Under Control

#### DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99 (Facility-Completed Draft)

### RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

#### Migration of Contaminated Groundwater Under Control

<b>Facility</b>	Name:	Keystone Steel & Wire Company
<b>Facility</b>	Address:	7000 S.W. Adams Street, Peoria, Illinois 61641
<b>Facility</b>	EPA ID #:	ILD 000 714 881
1.	groundwater medi	elevant/significant information on known and reasonably suspected releases to the a, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units ed Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?
	✓ If	yes - check here and continue with #2 below.
	If	no - re-evaluate existing data, or
	if o	data are not available skip to #8 and enter IN (more information needed) status code.

#### **BACKGROUND**

#### **Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

#### <u>Definition of Migration of Contaminated Groundwater Under Control EI</u>

A positive Migration of Contaminated Groundwater Under Control EI determination (YE status code) indicates that the migration of contaminated groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original area of contaminated groundwater (for all groundwater contamination subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

#### Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The Migration of Contaminated Groundwater Under Control EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

#### **Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

#### Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750)

Page 2

(Facility-Completed Draft)

(i	Is groundwater known or reasonably suspected to be contaminated above appropriately protective levels (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?						
	If yes - continue after identifying key contaminants, citing appropriate levels, and referencing supporting documentation.						
	If no - skip to #8 and enter YE status code, after citing appropriate levels, and referencin supporting documentation to demonstrate that groundwater is not contaminated.						
	If unknown - skip to #8 and enter IN status code.						
Ra	ationale and Reference(s): See Section 3.2 of the accompanying Environmental						
_	Indicators Assessment Report						
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_							
_							
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_							

#### Footnotes:

Contamination and contaminated describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate levels (appropriate for the protection of the groundwater resource and its beneficial uses).

#### Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750)

Page 3

3.

locations of		n within existing area of contaminated groundwater <sup>2</sup> as defined by the monitoring
	lesignate	ed at the time of this determination)?
	5 §	If yes - continue, after presenting or referencing the physical evidence (e.g., groundwampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of texisting area of groundwater contamination <sup>2</sup> ).
_		If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the existing area of groundwater contamination <sup>2</sup> ) - skip and enter NO status code, after providing an explanation.
_	I	If unknown - skip to #8 and enter IN status code.
Rationale:	and Refe	erence(s): See Section 3.3 and Section 3.4 of the accompanying Environmenta
		Indicators Assessment Report
	···~	

<sup>&</sup>lt;sup>2</sup> Existing area of contaminated groundwater is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of contamination that can and will be sampled/tested in the future to physically verify that all contaminated groundwater remains within this area, and that the further migration of contaminated groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

### Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750) Page 4

	s contaminated groundwater discharge into surface water bodies?
	If yes - continue after identifying potentially affected surface water bodies.
	If no - skip to #7 (and enter a YE status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater contamination does not enter surface water bodies.
	If unknown - skip to #8 and enter IN status code.
Rati	onale and Reference(s): See Section 3.3.3 of the accompanying Environmental
	Indicators Assessment Report
-	
	<del></del>

#### Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750)

Page 5

5.	Is the discharge of contaminated groundwater into surface water likely to be insignificant (i.e., the maximum concentration <sup>3</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater level, and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or ecosystems at these concentrations)?
	If yes - skip to #7 (and enter YE status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration <sup>3</sup> of key contaminants discharged above their groundwater level, the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.
	If no - (the discharge of contaminated groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration <sup>3</sup> of <u>each</u> contaminant discharged above its groundwater level, the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations <sup>3</sup> greater than 100 times their appropriate groundwater levels, the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.
	If unknown - enter IN status code in #8.
	Rationale and Reference(s): Not Applicable
	<del> </del>
	<del></del>

<sup>&</sup>lt;sup>3</sup> As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

#### Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750)

Page 6

6.

(Facility-Completed Draft)

	I remedy decision can be made and implemented <sup>4</sup> )?
. —	If yes - continue after either: 1) identifying the Final Remedy decision incorporating thes conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and ecosystems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment, appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (if the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and ecosystems, until such time when a full assessment and finite remedy decision can be made. Factors which should be considered in the interimassessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment levels, as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.  If no - (the discharge of contaminated groundwater can not be shown to be currently
. –	acceptable) - skip to #8 and enter NO status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or ecosystems.
	•
	If unknown - skip to 8 and enter IN status code.
Rationale a	nd Reference(s): Not Applicable
for many	cause areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) species, appropriate specialist (e.g., ecologist) should be included in management decisions the minate these areas by significantly altering or reversing groundwater flow pathways near surface lies.
	·

unacceptable impacts to the surface waters, sediments or ecosystems.

### Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750) Page 7

7.	Will groundwater <b>monitoring</b> / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the existing area of contaminated groundwater?
	If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the existing area of groundwater contamination.
	If no - enter NO status code in #8.
	If unknown - enter IN status code in #8.
	Rationale and Reference(s): See Section 3.5 of the accompanying Environmental
	Indicators Assessment Report
	<u> </u>

### Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750) Page 8

8.

EI (event code (	priate RCRIS status codes for the Migration of Contaminated Groundwater Under Control (CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI elow (attach appropriate supporting documentation as well as a map of the facility).
	YE - Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of the information contained in this EI determination, it has been determined that the Migration of Contaminated Groundwater is Under Control at the <a href="Keystone Steel &amp; Wire Company">Keystone Steel &amp; Wire Company</a> facility, EPA ID # ILD 000 714 881, located at <a href="Peoria">Peoria</a> , Illinois. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.
	NO - Unacceptable migration of contaminated groundwater is observed or expected.
	IN - More information is needed to make a determination.
Completed by	** Facility Prepared Draft ** Date January 2002  ** Keystone Steel & Wire Company **  ** EPA ID #: ILD 000 714 881 **
Supervisor	(signature)         Date           (print)         (title)           (EPA Region or State)         (EPA Region or State)
Locations where	References may be found:
<u>detern</u> submit Februa	vironmental Indicators Assessment Report accompanies this draft EI nination submittal. Also refer to the Current Conditions Report ted by Keystone Steel & Wire Company to U.S. EPA Region 5 in any 2001, and the RCRA Facility Assessment Report prepared in 1989 by f & Eddy (under contract with U.S. EPA Region 5).
Facility Contact	telephone number, and e-mail address:
racinty Contact,	•
(name) (title) _	Russ R. Perry, P.G., Keystone Steel & Wire Company Manager, Energy & Environmental Engineering  #) (309) 697-7538

# Appendix C Summary of 2001 Sampling Results

#### Keystone Steel & Wire Company

Analytical Results Summary for Environmental Indicators Assessment Phase 1 Sampling Event

Samples Collected 09/10/01 to 10/11/01 and 12/06/01

Oil Skimmer Basin Sheen Pond Tail Tracks Landfill F-Pond East Pond

#### US EPA Region 9 Preliminary Remediation Goals (PRGs):

Ground/Surface Water PRG	Tap Water PRG	Drinking Water MCL
Aluminum (mg/l) Arsenic (mg/l)	36	0.05
Barium (mg/l)	2.6	•
Cadmium (mg/l) Chromium (mg/l)	0.018	0.1
Copper (mg/l)	1.4	0.1
Iron (mg/l)	11	
Lead (mg/l)	0.00	0.015
Manganese (mg/l) Mercury (µg/l)	0.88	
Nickel (mg/l)	0.73	
Zinc (mg/l)	11	
1,1-Dichloroethane $(\mu g/I)$	810	
trans-1,2-Dichloroethene (µg/l)	120	
Trichloroethene (µg/l)	1.6	5.0
Xylenes (Total) $(\mu g/l)$ Phenol $(mg/l)$	1,400 22	
Arochlor 1254 (PCBs) (μg/l)	0.034	

		•	Migration	to GW:	
Soil/Sediment PRG	Residential	Industrial	DAF 20	DAF 1	ı
Aluminum (mg/kg-dr	y) 76,000	100,000	na	na	
Arsenic (mg/kg-dr	• •	440	na		(noncancer)
Barium (mg/kg-dr	• •	100,000	1,600	82	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Cadmium (mg/kg-dr	• •	810	8	0.4	
Chromium (mg/kg-dr		450	38	2	
Copper (mg/kg-dr		76,000	na	na	
lron (mg/kg-dr		100,000	na	na	
Lead (mg/kg-dr		750	na	na	
Manganese (mg/kg-dr	y) 1,800	32,000	na	na	
Mercury (mg/kg-dr	y) 23	610	na	na	
Nickel (mg/kg-dr	y) 1,600	41,000	130	7	
Zinc (mg/kg-dr	y) 23,000	100,000	12,000	620	
1,1-Dichloroethane (µg/kg-dr	y) 590,000	2,100,000	23,000	1,000	
trans-1,2-Dichloroethene (µg/kg-dr	• •	210,000	700	30	
Trichloroethene (µg/kg-dr	• •	6,100	60	3	
m/p-Xylene (µg/kg-dr		na	na	na	
o-Xylene (µg/kg-dr		na	na	na	
Total xylenes (µg/kg-dr		210,000	210,000	10,000	
Arochlor 1254 (PCBs) (µg/kg-dr		1000	na	na	

Note: DAF = Dilution-Attenuation Factor

(a DAF of 1 assumes no dilution and no natural attenuation of soil leachate)

#### Oil Skimmer Basin Area Groundwater Analysis

	Well ID	CL-1	CL-2	CL-3	CL-4	CL-5	CL-5	BT-15	Field Blank
	Sample No.	1	1	1	1	1	2 (dup)	1	1
	Lab ID	01092683-1	01092683-2	01092683-3	01092683-4	01092683-5	01092683-6	01092683-7	01092683-8
	Sample ID	BCL-1-G-01	BCL-2-G-01	BCL-3-G-01	BCL-4-G-01	BCL-5-G-01	BCL-5-G-02	BT-15-G-01	BFB2-G-01
	Date	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01
	Time	18:00	18:15	17:50	17:40	17:30	17:30	18:40	14:40
Parameter:	PRG <sup>b</sup>	<u>'</u>	]						
Aluminum (mg/l)	36	0.52	0.1 J	0.068 J	0.04 J	0.016 J	0.015 J	0.35	0.0059 J
Arsenic (mg/l)	0.05°	0.0068	0.0011	0.0024	0.026	0.0082	0.0078	0.0008 J	0.00018 J
Barium (mg/l)	2.6	0.13 J	0.069 J	0.14 J	0.24	0.097 J	0.11 J	0.19 J	0.00027 J
Cadmium (mg/l)	0.018	0.005 U							
Chromium (mg/l)	0.1 <sup>c</sup>	0.004 J	0.0028 J	0.004 J	0.0035 J	0.0034 J	0.0042 J	0.0026 J	0.00036 J
Copper (mg/l)	1.4	0.0057 J	0.0018 J	0.002 J	0.001 J	0.0014 J	0.0016 J	0.0027 J	0.0003 J
Iron (mg/l)	11	1.9	0.1	0.42	4.6	2.1	2.1	1.9	0.1 U
Lead (mg/l)	0.015 °	0.0018 J	0.00019 J	0.00081 J		0.0011 J	0.0007 J	0.015	0.0002 J
Manganese (mg/l)	0.88	12	0.71	1.8	1.2	5.7	5.4	0.54	0.00039 J
Mercury (µg/l)	11	0.2 U	0.2 U			0.2 U	0.2 U	0.2 U	0.2 U
			•						1 ,
HEM <sup>a</sup> (mg/l)		6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Phenolics (mg/l)	22	0.01	0.015	0.005 U	0.0089	0.0039 J	0.0069	0.005 U	0.005 U

<sup>&</sup>lt;sup>a</sup> HEM = Hexane Extractable Materials (includes both Oil & Grease and Total Petroleum Hydrocarbons)

#### Data Flags:

U = Analyte not detected at method reporting limit concentration shown.

<sup>&</sup>lt;sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)

J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

#### Oil Skimmer Basin Sediment Sample

	Location	Oil Skimmer Basin
	Sample No.	1
	Lab ID	01093292-1
	Sample ID	Grab
	Date	09/28/01
	Time	09:00
Parameter:	PRG <sup>a</sup>	
Total Solids (%)		69
10141 001140 (70)		
Total Metals (mg/kg-dry)		
Aluminum	100,000	490
Antimony	820	35
Arsenic	440	1.0 U
Barium	100,000	22
Beryllium	2,200	9.7
Boron	79,000	5.2
Cadmium	810	0.14 U
Chromium	450	290
Cobalt	100,000	. 28
Copper	76,000	1,400
Iron	100,000	460,000
Lead	750	7.1
Magnesium		590 U
Manganese	32,000	2,800
Mercury	610	0.029 U
Molybdenum	10,000	74
Nickel	41,000	380
Selenium	10,000	1.2 U
Silver	10,000	0.14 U
Thallium	130	26
Tin	100,000	56
Titanium		16
Zinc	100,000	97
BOD <sup>b</sup> (mg/kg-dry)		6,700
COD° (mg/kg-dry)		240,000
, 🗸		67,000
HEM <sup>d</sup> (mg/kg-dry)		07,000

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG)

#### Data Flags:

U = Analyte not detected at method reporting limit concentration shown.

<sup>&</sup>lt;sup>b</sup> BOD = Biochemical Oxygen Demand

<sup>&</sup>lt;sup>c</sup>COD = Chemical Oxygen Demand

<sup>&</sup>lt;sup>d</sup> HEM = Hexane Extractable Materials (includes both Oil & Grease and Total Petroleum Hydrocarbons)

#### Oil Skimmer Basin Influent Water

	Node	CL #2	CL #3
	Sample No.	1	1 1
	Lab ID	01101807-1	01101807-2
•	Sample ID	Grab	Grab
	Date	10/09/01	10/09/01
	Time	13:43	13:50
Parameter:	PRG <sup>a</sup>		
Arsenic (mg/l)	0.05 <sup>b</sup>	0.02 U	
Barium (mg/l)	2.6	0.04	0.038
Boron (mg/l)	3.3	0.33	0.33
Cadmium (mg/l)	0.018	0.002 U	4
Chromium (mg/l)	0.1 <sup>b</sup>	0.004 U	
Copper (mg/l)	1.4	0.005 U	
Iron (mg/l)	11	0.47	1.5
Lead (mg/l)	0.015 <sup>b</sup>	0.01 U	0.01 U
Manganese (mg/l)	0.88	0.071	0.066
Mercury (µg/l)	11	0.2 U	
Nickel (mg/l)	0.73	0.016	0.027
Selenium (mg/l)	0.18	0.05 U	0.05 U
Silver (mg/l)	0.18	0.01 U	
Zinc (mg/l)	11	0.006 U	0.006 U
			0.00
pH		8.18	8.22
TDS° (mg/l)		670	680
TSS d (mg/l)		5.0	22
BOD* (mg/l)		3.0	3.0
HEM <sup>f</sup> (mg/l)		6.0 U	5.0 U

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

#### Data Flags:

U = Analyte not detected at method reporting limit concentration shown.

<sup>&</sup>lt;sup>b</sup> Drinking Water MCL (no PRG listed)

<sup>&</sup>lt;sup>c</sup>TDS = Total Dissolved Solids

<sup>&</sup>lt;sup>d</sup> TSS = Total Suspended Solids

<sup>&</sup>lt;sup>e</sup> BOD = Biochemical Oxygen Demand

<sup>&</sup>lt;sup>f</sup>HEM = Hexane Extractable Materials (includes Oil & Grease and Total Petroleum Hydrocarbons)

#### **Sheen Pond Groundwater Analysis**

	Well ID	T-5	T-19B	T-19B	Field Blank	Rinse Blank <sup>a</sup>
	Sample No.	1	1	2 (dup)	1	1
	Lab ID	01092688-1	01092688-2	01092688-3	01092688-4	1092688-5
	Sample ID	NT-5A-G-01	NT-19B-G-01	NT-19B-G-02	NFB-G-01	NRB-G-01
	Date	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01
	Time	12:45	13:10	13:15	11:45	11:55
Parameter:	PRG <sup>b</sup>					
Arsenic (mg/L)	0.05°	0.00085 J	0.0016	0.0005 J	0.001 U	0.001 U
Cadmium (mg/L)	0.018	0.005 U	0.005 U	0.005 U	0.018	0.005 U
Chromium (mg/L)	0.1 °	0.0086 J	0.0047 J	0.001 J	0.01 U	0.01 U
Copper (mg/L)	1.4	0.0045 J	0.0084 J	0.00034 J	0.025 U	0.025 U
Lead (mg/L)	0.015 <sup>c</sup>	0.0074	0.0066	0.0005 J	0.001 J	0.003 U
Zinc (mg/L)	11	0.022	0.09	0.01 J	0.016 J	0.0073 J

	Well ID	T-5	T-19B	T-19B	Field Blank	Rinse Blank a
	Sample No.	1	1	2	1	1 1
	Lab ID	01092688-7	01092688-8	01092688-9	01092688-6	01092688-5
	Sample ID	NT-5A-G-01	NT-19B-G-01	NT-19-G-02	NFB-G-01	NRB-G-01
	Date	10/11/01	10/11/01	10/11/01	10/11/01	09/19/01
	Time	11:40	12:40	12:50	10:30	11:55
Parameter:	PRG⁵	-				
Aroclor 1254 (µg/L)	0.034	1 U	1 U	1 U	1 U	1 U

<sup>&</sup>lt;sup>a</sup> Equipment rinse blank for Sheen Pond sediment sampling equipment. <sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)

#### **Sheen Pond Soil Analysis**

	Node ID	N1	N2	N2	N3	N4	N5
	Sample No.	1	1	2 (dup)	1	1	1
	Lab ID	01092691-1	01092691-2	01092691-3	01092691-4	01092691-5	01092691-6
	Sample ID	N-01-S-01	N-02-S-01	N-02-S-02	N-03-S-01	N-04-S-01	N-05-S-01
	Date	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01
	Time	13:55	14:00	14:02	14:15	14:25	14:35
Parameter:	PRG <sup>a</sup>						
Moisture (%)		16	21	21	18	19	16
Arsenic (mg/kg-dry)	440	10	8.9	6.7	6.8	6.5	3.8
Cadmium (mg/kg-dry)	810	1.9	0.75 J	0.63 J	1.6	0.57 J	0.8 J
Chromium (mg/kg-dry)	450	98 C	24 C	24 C	89 C	22 C	26 C
Copper (mg/kg-dry)	76,000	83	20	18	23	17	18
Lead (mg/kg-dry)	750	140	26	28	50	26	27
Zinc (mg/kg-dry)	100,000	260	110	110	200	100	110
Aroclor 1254 (µg/kg-dry)	1,000	61 J	200 U	1 <u>8</u> J	100 J	28 J	54 J

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG) (Note: all values are also below their respective Residential PRGs)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.
- C = Result qualified due to batch control sample failing to meet the required acceptance critera.

#### Tail Tracks Landfill Area Groundwater Analysis

	Well ID	TL-1	TL-2	TL-3	TL-3	TL-4	W-7	Field Blank	Rinse Blank a
	Sample No.	1	1	1	2 (dup)	1	1	1	1
	Lab ID	01092694-1	01092694-2	01092694-3	01092694-4	01092694-5	01092694-6	01092694-7	01092694-8
	Sample ID	TTL-1-G-01	TTL-2-G-01	TTL-3-G-01	TTL-3-G-02	TTL-4-G-01	TW-7-G-01	TFB-G-01	TRB-S-01
	Date	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01
	Time	15:10	15:17	15:25	15:25	15:35	14:55	07:40	07:40
Parameter:	PRG⁵								
Cadmium (mg/L)	0.018	0.005 U	0.005 U						
Chromium (mg/L)	0.1 <sup>c</sup>	0.0056 J	0.0082 J	0.0066 J	0.0068 J	0.0095 J	0.0029 J	0.00057 J	0.0002 J
Lead (mg/L)	0.015 <sup>c</sup>	0.00064 J	0.021	0.0088	0.0078	0.2	0.0005 J	0.003 U	0.003 U
Nickel (mg/L)	0.73	0.0092	0.011	0.0064	0.0049 J	0.012	0.0074	0.005 U	0.005 U
Zinc (mg/L)	11	0.012 J	0.1	0.025	0.049	0.15	0.0054 J	0.0045_J	0.0024 J

<sup>&</sup>lt;sup>a</sup> Equipment rinse blank for Tail Tracks Landfill Area soil sampling equipment. <sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)

U = Analyte not detected at method reporting limit concentration shown.

J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

#### Tail Tracks Landfill Area Soil Analysis

	Node ID	T1	T2	T3	T4	T5	T5	T6
	Sample No.	1	1	1	1	1	2 (dup)	1
	Lab ID	01092695-1	01092695-2	01092695-3	01092695-4	01092695-5	01092695-6	01092695-7
	Sample ID	T-01-S-01	T-02-S-01	T-03-S-01	T-04-S-01	T-05-S-01	T-05-S-02	T-06-S-01
	Date	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01
	Time	11:00	10:50	10:30	10:20	09:55	10:00	09:45
Parameter:	PRG <sup>a</sup>							
Moisture (%)		32	20	19	29	34	36	13
Cadmium (mg/kg-dry)	810	2.6	2	0.99 J	6.6	4.5	3.1	16
Chromium (mg/kg-dry)	450	43	58	27	59	47	38	220
Lead (mg/kg-dry)	750	220	110	68	790	240	150	690
Nickel (mg/kg-dry)	41,000	26	22	25	24	36	33	95
Zinc (mg/kg-dry)	100,000	660	480	150	1,800	910	550	4,200

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG)

(Note: all values except Pb at T4, and Pb and Cr at T6 are also below their respective Residential PRGs)

(Residential Pb = 400 mg/kg)

(Residential Cr = 210 mg/kg)

#### Data Flags:

J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

#### F-Pond Surface Water Analysis

	Node	F7	F7	F8	Rinse Blank	Trip Blank	Rinse Blank a
	Sample No.	1	2 (dup)	1	1	1	1
	Lab ID	01092801-4	01092801-5	01092801-6	01092801-2	01092801-1	01092801-3
	Sample ID	F07-W-01	F07-W-02	F08-W-01	FRB-W-01	Trip Blank	FRB-D-01
	Date	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01
	Time	12:30	12:30	15:15	10:10	07:00	10:00
Parameter:	PRG⁵			<u> </u>			
Aluminum (mg/l)	36	0.1 J	0.076 J	0.087 J	0.0094 J	na	0.014 J
Barium (mg/l)	2.6	0.034 J	0.034 J	0.038 J	0.00027 J	na	0.00083 J
Cadmium (mg/l)	0.018	0.005 U	0.005 U	0.005 U	0.005 ป	na	0.005 U
Chromium (mg/l)	0.1 °	0.0065 J	0.0055 J	0.0046 J	0.0011 J	na	0.01 U
Copper (mg/l)	1.4	0.0092 J	0.0084 J	0.0021 J	0.0026 J	na	0.025 U
Iron (mg/l)	11	16	15	0.19	0.77	na na	0.018 J
Lead (mg/l)	0.015°	0.047	0.038	0.029	0.003 U	na na	0.003 U
Manganese (mg/l)	0.88	16	16	0.2	0.00053 J	na	0.00046 J
Mercury (µg/l)	11	0.2 U	0.2 U	0.2 U	0.2 U	na	0.2 U
Zinc (mg/l)	11	0.27	0.22	0.026	0.0019 J	na	0.002 J
1,1-Dichloroethane (µg/l)	810	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene (µg/l)	120	10 U	10 U	10 U	10 U	10 U	
Trichloroethene (µg/l)	1.6	1.6 U	1.6 U	2	1.6 U	1.6 U	1.6 U
Xylenes (Total) (μg/l)	1,400	10 U	10 U		10 U	10 U	10 U

na = not applicable

(Note: EPA drinking water std. For TCE is  $5 \mu g/L$ .)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

<sup>&</sup>lt;sup>a</sup> Equipment rinse blank for F-Pond sediment sampling equipment.

<sup>&</sup>lt;sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)



	Node ID	F1		F1	F2	F3	F4	F5	F6
	Sample No.	1		2 (dup)	1	1	1	1	1
	Lab ID	01092802-2		01092802-1	01092802-3	01092802-4	01092802-5	01092802-6	01092802-7
	Sample ID	F-01-D-01		F-01-D-02	F-02-D-01	F-03-D-01	F-04-D-01	F-05-D-01	F-06-D-01
	Date	09/21/01		09/21/01	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01
·	Time	12:30	_	12:30	14:15	14:00	15:00	14:40	15:15
Parameter:	PRG <sup>a</sup>			:					
Moisture (%)		. 86		80	73	81	55	73	75
Aluminum (mg/kg-dry)	100,000	21,000		16,000	18,000	31,000	19,000	36,000	26,000
Barium (mg/kg-dry)	100,000	160	J	120 J	170	200 J	240	220	150 J
Cadmium (mg/kg-dry)	810	3.6	J	2.8 J	3.2 J	2.2 J	1.6 J	3.7	2.2 J
Chromium (mg/kg-dry)	450	170		130	70	95	51	74	68
Copper (mg/kg-dry)	76,000	210		140	63	140	47	85	64
lron (mg/kg-dry)	100,000	140,000		100,000	28,000	63,000	21,000	41,000	36,000
Lead (mg/kg-dry)	750	1,600		1,200	780	530	3,100	210	320
Manganese (mg/kg-dry)	32,000	9,300		6,500	1,600	4,200	760	440	560
Mercury (mg/kg-dry)	610	0.28	U	0.20 U	0.15 U				0.18
Zinc (mg/kg-dry)	100,000	11,000		8,500	1,200	1,800	440	630	560
1,1-Dichloroethane (µg/kg-dry)	2,100,000	36	ÜFR	25. U				18 U	
m/p-Xylene (µg/kg-dry)		36	UF	25 U				18 U	
o-Xylene (µg/kg-dry)		36	UF	25 U				18 U	
Total xylenes (µg/kg-dry)	210,000	71	UF	50 U				37 U	
trans-1,2-Dichloroethene (µg/kg-dry)	210,000	36	UF	25 U				18 U	
Trichloroethene (µg/kg-dry)	6,100	36	UFR	25 U	18 U	26 U	57	18_U	20 U

US EPA Region 9 Industrial Preliminary Remediation Goal (PRG)
 (Note that all values except for Iron, Lead and Manganese also meet residential PRGs.)
 (Residential PRGs for: Fe = 23,000 mg/kg; Pb = 400 mg/kg; and Mn = 1,800 mg/kg.)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.
- F = Result qualified due to internal standard result outside the required acceptance criteria.
- R = Result qualified due matrix spike/matrix spike duplicate (MS/MSD) results outside the required acceptance criteria.

Roberts Drive, Suite 100 Atlanta, Georgia 30350 Pĥone: 770-641-9756 Fax: 770-642-0257



### Sampling Report for Environmental Indicators Assessment Investigation

**Keystone Steel & Wire Company** 

Peoria, Illinois

January 2002

Prepared For

Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641

U.S. EPA Facility ID No.: ILD 000 714 881





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ext 116

January 29, 2002

Mr. Jonathan Adenuga
Enforcement and Compliance Assurance
Waste, Pesticides, and Toxics Division
U.S. Environmental Protection Agency, Region 5 (RE-9J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

RE: Environmental Indicators Assessment Report and Sampling Report for Environmental Indicators Assessment Investigation for Keystone Steel & Wire Company, Peoria, Illinois (EPA Facility ID No. ILD 000 714 881) as per the Administrative Order on Consent dated December 20, 2000

Dear Mr. Adenuga:

RMT, Inc. is submitting the above-referenced reports on behalf of Keystone Steel & Wire Company for U.S. Environmental Protection Agency (EPA) Region 5 review. Keystone is submitting these reports in compliance with the Administrative Order on Consent (AOC) that was entered into with USEPA Region 5 on December 20, 2000.

Please find enclosed two (2) copies of the *Environmental Indicators Assessment Report* and two (2) copies of the *Sampling Report for Environmental Indicators Assessment Investigation* as required in AOC under Paragraphs 16 and 17.

If you have any questions or need any additional information, please do not hesitate to contact me or Russ Perry of Keystone at (309) 697-7538.

Sincerely, RMT, Inc.

Mark T. Prytula, Ph.D., P.E. Senior Environmental Engineer

Mark T. Pust

**Enclosures** 

cc: Russ Perry, P.G., Keystone Steel & Wire Company Andrew Running, Kirkland & Ellis Robert Aten Ph.D, L.P.G., Earth Tech Jeffery Pierce, P.E., RMT, Inc.

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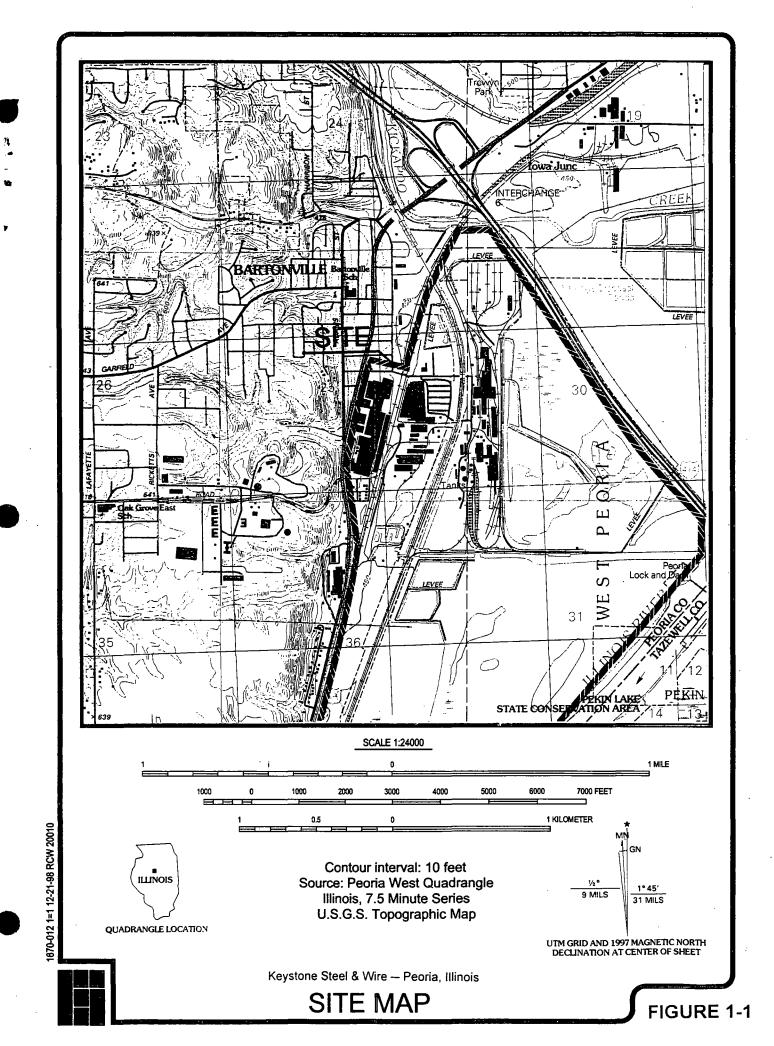
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## Section 1 Introduction

RMT, Inc. has prepared this Sampling Report (Report) on behalf of Keystone Steel & Wire Company (Keystone). This Report summarizes the results of sampling performed to investigate several potential areas of concern at Keystone's manufacturing facility, which is located just south of Peoria, Illinois (Figure 1-1). Keystone has performed this sampling as part of its ongoing effort to comply with the Administrative Order on Consent (AOC) entered into with U.S. Environmental Protection Agency (EPA) Region 5 on December 20, 2000.

The five areas addressed in this Report are located in the Steel Works segment of the Peoria facility. The areas investigated have been identified as (1) Sheen Pond, (2) F-Pond, (3) Tail Tracks Landfill, (4) East Pond, and (5) Oil Skimmer Basin. The locations of these units at the facility are shown on Figure 1-2. These five areas were listed in the AOC as requiring investigation to evaluate if they had been impacted by any releases of hazardous waste and/or hazardous constituents.

Limited sampling in these areas was originally performed as part of the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) conducted by EPA in 1987. The purpose of this Report is to summarize the analytical results of samples collected at these areas in 2001 to determine the nature and/or to confirm the presence of constituents detected during the 1987 sampling activities.



# Section 2 Objectives

The goal of this sampling effort was to determine the nature and/or to confirm the presence of constituents detected by EPA during the 1987 RFA. The 2001 investigation included sampling performed at five units that were identified as areas of potential concern after a site visit by EPA Region 5 representatives in November 1999. This investigation was designed to provide information on the current status of the Sheen Pond, F-Pond, Tail Tracks Landfill, East Pond, and Oil Skimmer Basin based upon more representative sampling than the single sample results typical of the historical data. The results have been used to complete an Environmental Indicators Assessment for the facility.

## Section 3 Procedures

The field and analytical methodologies used to collect and analyze soil, sediment, groundwater, and surface water samples for certain metals, volatile organic compounds (VOCs), and/or semivolatile organic compounds (SVOCs) are described below. Sample collection, field preservation (for volatiles analysis samples), sample handling, and soil classifications were performed by Earth Tech, Inc. (Bloomington, Indiana). PDC Laboratories, Inc. (Peoria, Illinois) performed sample preservation, extraction, and analysis.

All field sampling activities, sample handling, laboratory analysis, and data quality control methods conformed to *Test Methods for Evaluating Solid Waste*, *Physical/Chemical Methods* with updates (referenced as SW-846) and the EPA Region 5 *RCRA Quality Assurance Project Plan Instructions* (1998).

#### 3.1 Sample Locations

Sampling locations for this event were chosen as described in the RMT *Environmental Indicators Phase I Sampling Plan* (August 2001). The as-sampled soil, sediment, surface water, and groundwater sample locations are shown on **Figure 1-2**. All soil and surface water locations were staked at the time of collection for subsequent survey. The three Tail Tracks Landfill Area surface water sample locations are approximate, as they were collected after the field survey had been completed. The positions of these samples were determined relative to the surveyed wells and soil sample stakes in the area.

#### 3.2 Sample Collection and Handling

Samples were collected in new and/or properly cleaned and decontaminated equipment and sample containers (the latter were provided by PDC). Only discrete grab samples were collected (no compositing was employed).

Surface water samples were collected either by dipping the sample containers into the water being sampled or using a decontaminated, pole-mounted stainless steel scoop to draw the water sample and then transfer it into the sample container. Care was taken in filling of sample containers to prevent displacing preservatives that were pre-added by PDC. Surface water

samples were collected prior to collecting sediment samples to prevent cross-contamination of the aqueous samples by resuspended sediment.

Soil samples in the two areas without standing water (i.e., the Tail Tracks Landfill and the Sheen Pond) were collected using stainless steel hand augers and/or trowels. At each sample location, a shallow hole was created by digging or augering down through the topsoil to a depth of six inches. Soil samples were then collected from the freshly exposed soil at the 6-12 inch depth interval. The soil was transferred from the trowel or auger into a stainless steel bowl for classification and sample containerization. At the Sheen Pond, organic analyses samples were containerized first, followed by samples for total metals analysis. Samples collected for analyses other than VOCs were homogenized prior to containerization to ensure that PDC analyzed a representative sample aliquot.

Sediment samples at the East Pond and F-Pond were collected 10 to 12 feet from the shore using a pole-mounted stainless steel scoop. At the time of sampling, the water level in both units was too shallow to allow sampling from a boat or barge. Surface sediment samples were transferred to a stainless steel bowl for classification and containerization. The sediment samples were collected from the surface layer (i.e., 0-12 inch depth interval) at these two units. At the F-Pond, En-Core® sample containers for VOA analysis were filled first, followed by containerization of samples for total metals analysis.

Groundwater samples were collected using clean disposable bailers. Prior to sampling, three well volumes of water were purged from each well. Samples were carefully poured directly from the bailers into laboratory supplied sample containers. All samples were placed in coolers containing ice and handled and picked up by PDC under proper Chain of Custody procedures. All purge water was containerized and disposed of at the Keystone wastewater treatment facility.

Rinsate blank samples were collected by unwrapping decontaminated soil sampling equipment and rinsing with distilled/deionized water into a decontaminated stainless steel bowl. The rinsate was then transferred directly into laboratory supplied sample containers. Based upon the relatively small number of samples, only one rinsate blank was necessary at each unit. These samples were analyzed as per the constituents of concern (COC) list for the unit at which they were collected. Field Blanks for aqueous samples were collected by pouring distilled/deionized water into water sampling equipment and then filling the appropriate sample containers. One field blank was collected during sampling at each unit.

Field duplicates for each media at each unit were given fictitious sample identifiers and were not identified as duplicates on container labels or chain-of-custody forms. One matrix spike/matrix spike duplicate (MS/MSD) sample was collected for each unit and each media.

These samples were identified with the appropriate nomenclature followed by "MS/MSD" on all labels and forms. Trip blanks were supplied by PDC and enclosed in each cooler containing aqueous samples.

Excess soil sample material, cuttings generated during hand augering, personal protective equipment, and solid residues generated during equipment cleaning and decontamination were collected in a 55-gallon steel drum. These collected wastes were transferred to an appropriate waste disposal company for characterization testing and final disposition. Wastewater generated during decontamination procedures, purge water, excess sample, etc. was collected in 55-gallon steel drums and transferred to Keystone's on-site wastewater treatment plant for treatment.

#### 3.3 Equipment Decontamination

All sampling equipment were thoroughly decontaminated to prevent sample cross-contamination between uses. Equipment were decontaminated prior to initial use, between subsequent uses (between sampling nodes), and prior to leaving the site. The following procedures were used to decontaminate sampling equipment with regard to both metal and organic compound residues:

- 1. Check equipment for damage and proper working order.
- 2. Rinse equipment with potable water; wash with potable water, a nylon brush, and phosphate-free detergent (Liquinox® or equivalent); and rinse with potable water.
- 3. Rinse with pesticide-grade isopropanol.
- 4. Rinse with distilled/deionized water and allow to air dry.
- 5. Wrap equipment in clean aluminum foil (shiny side out) to prevent contamination during storage and transportation in the field (unless equipment will be reused immediately in which case, use clean plastic sheeting or aluminum foil to prevent contact of decontaminated equipment with the ground, truck beds, etc.).

#### 3.4 Sample Media and Constituents of Concern

The types of samples collected from each area and the analytical parameters for which the samples were tested are detailed in **Table 3-1**. The COC lists were compiled by reviewing the historical data from each unit and including any chemical detected above background concentrations for which a EPA Region 9 Preliminary Remediation Goal (PRG) has been established (i.e., only hazardous or potentially hazardous constituents). For example, although calcium and sodium were detected in all of the 1987 RFA soil samples, there are no remediation

goals established for these compounds and they have not been included as COCs for this sampling event. Additional analytes were also included in the COC lists for the Tail Tracks Landfill and Oil Skimmer Basin.

Several additional samples not described as part of the August 2001 Sampling Plan were also collected from two of the subject units in 2001. One sediment sample and two influent water samples were collected from the Oil Skimmer Basin as part of Keystone's NPDES permit renewal activities. Three surface water samples were also collected in the Tail Tracks Landfill area from the nearby shoreline of Mud Lake, as per concerns raised by EPA Region 5 in December 2001. The analytical results summaries and the laboratory data reports for these additional samples are included herein.

Table 3-1
Constituents Of Concern Summary

Unit	Media Sampled	Inorganic Analytes	Organic Analytes
Sheen Pond	Soil & Groundwater	As, Cd, Cr, Cu, Pb, & Zn	Arochlor-1254
F-Pond	Sediment & Surface Water	Al, Ba, Cd, Cr, Cu, Fe, Hg, Pb, Mn, & Zn	trans-1,2-DCE, TCE, 1,1-DCA, & xylenes (total)
Tail Tracks Landfill	Soil, Surface Water, & Groundwater	Cd, Cr, Ni, Pb, & Zn	none
East Pond	Sediment & Surface Water	Cr, Cu, Pb, & Zn	none
Oil Skimmer Basin	Influent Water, Sediment, & Groundwater	As, Al, Ba, Cd, Cr, Cu, Fe, Hg, Mn, & Pb,	Oil & Grease, Total Phenols, & TPH

#### 3.5 Analytical Methods and Procedures

The samples collected from the five units were analyzed for total metals and/or total organics (as per the parameter lists in **Table 3-1**). The SW-846 and EPA methods that were employed for these analyses are listed in **Table 3-2** and **Table 3-3**. Also shown in these tables are the requisite sample holding times and detection limits (expressed as practical quantitation limits or PQLs) for each method.

Table 3-2 Required Parameters For Total Metals Analyses

Parameter	Sample Preservative	Preserved Sample Hold Time (at 4°C)	Method <sup>1</sup>	PQL <sup>2</sup>					
Soil Samples									
Aluminum	4°C	6 months	6010B	40					
Arsenic	4°C	6 months	6010B	0.3					
Barium	4°C	6 months	6010B	40					
Cadmium	4°C	6 months	6010B	1.0					
Chromium	4°C	6 months	6010B	2.0					
Copper	4°C	6 months	6010B	5.0					
Iron	4°C	6 months	6010B	20					
Lead	4°C	6 months	6010B	0.6					
Manganese	4°C	6 months	6010B	3.0					
Mercury	4°C	28 days	7471A	0.04					
Zinc	4°C	6 months	6010B	4.0					
Aqueous Samples									
Aluminum	HNO₃ to pH<2	6 months	200.8	200					
Arsenic	HNO <sub>3</sub> to pH<2	6 months	200.8	1.0					
Barium	HNO <sub>3</sub> to pH<2	6 months	200.8	200					
Cadmium	HNO₃ to pH<2	6 months	200.8	5.0					
Chromium	HNO₃ to pH<2	6 months	200.8	10					
Copper	HNO₃ to pH<2	6 months	200.8	25					
Iron	HNO₃ to pH<2	6 months	200.7	100					
Lead	HNO <sub>3</sub> to pH<2	6 months	200.8	3.0					
Manganese	HNO₃ to pH<2	6 months	200.8	15					
Mercury	HNO₃ to pH<2	28 days	200.8 R5.4	0.2					
Zinc	HNO₃ to pH<2	6 months	200.8	20					

<sup>&</sup>lt;sup>1</sup> Method numbers for soil samples are SW-846, method numbers for aqueous samples are EPA.

<sup>&</sup>lt;sup>2</sup> Method Practical Quantitation Limits in mg/kg for soil samples (wet weight basis) and μg/L for aqueous samples. PQLs shown are the lower of the EPA Region 9 PRG or the State of Illinois requirement for RCRA investigations (35 IAC Part 740), whichever is lower (except for aqueous arsenic, where the PRG (0.045 μg/L) is below the analytical detection limit).

Table 3-3
Required Parameters For Organic Analyses

Procedure	Sample Preservative	Sample Hold Time <sup>1</sup>	Extract Hold Time <sup>2</sup>	. Method3	PQL4		
Soil Samples							
Volatile Organics <sup>5</sup>	Cool to 4°C, (bisulfate or methanol) <sup>7</sup>	48 hours, (14 days) <sup>7</sup>	N/A	8260B / 5035	10 μg/kg		
Pesticides/ PCBs <sup>6</sup>	Cool to 4°C	14 days	40 days	8082 <sub>.</sub> / 3550B	160 μg/kg		
Aqueous Samples							
Volatile Organics	HCl to pH<2, Cool to 4°C	14 days	N/A	624	trans-1,2-DCE10 μg/L TCE1.6 μg/L 1,1-DCA10 μg/L total xylene10 μg/L		
Pesticides/ PCBs 6	Cool to 4°C	7 days	40 days	608	0.03 μg/L		
Oil & Grease	HCl to pH<2, Cool to 4°C	28 days	N/A	1664 Modified <sup>8</sup>	5 mg/L		
Total Phenols	H₃PO₄ to pH<2, 1g CuSO₄ / L Cool to 4°C	28 days	N/A	9066	5 mg/L		
Total Petroleum Hydrocarbons	HCl to pH<2, Cool to 4°C	28 days	N/A	418.1	1 mg/L		

<sup>&</sup>lt;sup>1</sup> Maximum hold time for preserved sample prior to analysis or extraction.

<sup>&</sup>lt;sup>2</sup> Maximum hold time for extract at 4°C prior to analysis.

<sup>&</sup>lt;sup>3</sup> Method numbers for soil samples are SW-846, method numbers for aqueous samples are EPA.

<sup>&</sup>lt;sup>4</sup> Method Practical Quantitation Limits in for soil samples are wet-weight based. PQLs shown for volatiles and PCBs are the lower of the EPA Region 9 PRG or the State of Illinois requirement for RCRA investigations (35 IAC Part 740), whichever is lower.

<sup>&</sup>lt;sup>5</sup> trans-1,2-DCE, TCE, 1,1-DCA, and total xylene.

Arochlor-1254

<sup>&</sup>lt;sup>7</sup> Samples collected using EnCore<sup>TM</sup> samplers per Method 5035 must either be analyzed (Method 5032) or preserved with sodium bisulfate solution or methanol (Method 5035) within 48 hours of collection. Preserved samples (Method 5035) must be analyzed within 14 days of collection.

<sup>&</sup>lt;sup>8</sup>By Hexane Extractable Material (HEM)

## Section 4 Results

#### 4.1 Soil Classification and Boring Logs

Soil classification information for each node sampled was described on Illinois Environmental Protection Agency (IEPA) Field Boring Log Forms. The logs for this sampling event are included in **Appendix B** of this Report. These logs include the total depth of each boring, the intervals sampled, the sample collection techniques employed, groundwater elevations, and continuous classification and description of the types of soil encountered at each node.

Well Completion Report forms (also using IEPA format) have been prepared for the four groundwater monitor wells that were installed for this sampling event in the Tail Tracks Landfill area. These forms are presented as **Appendix C** of this Report. The Well Completion Reports provide details for each well, including total depth, screen interval, well construction information, static water level, etc.

#### 4.2 Data Summary and Discussion

Tables summarizing the analytical data obtained during this sampling event have been compiled and are presented in **Appendix A** of this Report. A table summarizing the applicable EPA Region 9 PRGs that were used for data screening purposes has also been included in **Appendix A**. The raw data for this sampling event (copies of the analytical laboratory data reports) are located in **Appendix D** through **Appendix N**.

Sheen Pond: Groundwater and soil samples were collected from this area and analyzed for several metals and a polychlorinated biphenyl (PCB) congener that were detected during EPA's 1987 RFA sampling event. No surface water was present in the unit at the time of sampling, and the water table was below the screen interval on one nearby groundwater well, so only two of the existing monitor wells adjacent to the unit were sampled.

All of the detected metals concentrations in all of the analytical samples were well below the respective tap water PRGs or Federal drinking water standards (the latter were used to screen results for metals for which no tap water PRGs have been set). PCB was not detected in any of the groundwater samples. Likewise, in all of the soil samples from the unit, metal concentrations were well below the industrial soil PRGs. Arochlor 1254 was detected, but only

4-1

at concentrations estimated below the calibration range for the analysis, and well below the industrial PRG.

*F-Pond:* Surface water and sediment samples collected from this were analyzed for several metals and VOCs detected during EPA's 1987 RFA sampling event. Iron and manganese were detected above the tap water PRGs in one of the two surface water samples, and both samples contained lead (29 μg/L to 47 μg/L) above the Federal drinking water standard (15 μg/L), but well below Keystone's NPDES-permitted discharge limit (200 μg/L). TCE was also detected in one sample at 2 μg/L, just barely above the method detection limit and EPA Region 9 tap water PRG of 1.6 μg/L. However, the observed concentration in this sample is less than one-half of the Federal drinking water standard for TCE (5 μg/L).

In the sediment samples, only iron (a non-hazardous constituent) and lead were detected at concentrations above the industrial PRGs. Iron concentrations in the sediment ranged from 21,000 mg/kg to 140,000 mg/kg, and lead concentrations ranged from 210 mg/kg to 3,100 mg/kg. The concentrations of both of these metals were below the PRGs in the two southernmost samples (closest to the outlet of the F-Pond). The maximum cadmium concentration observed in the seven samples analyzed in 2001 (including one duplicate) was 3.7 mg/kg. VOCs were only detected in one of the sediment samples, and all were at concentrations well below the industrial soil PRGs.

East Pond: Surface water and sediment samples collected from this area were analyzed for several metals detected during EPA's 1987 RFA sampling event. None of the five soil samples analyzed in 2001 (including one duplicate) contained metal concentrations above a residential PRG. For example, the lead concentrations from the 2001 sediment samples ranged from 60 mg/kg to 110 mg/kg, which are below the residential PRG of 400 mg/kg for this metal. The three surface water samples (including one duplicate) collected in 2001 exceeded the drinking water standard for lead (with concentrations ranging from 16  $\mu$ g/L to 50  $\mu$ g/L), but all were well below Keystone's NPDES-permitted discharge limit. All of the other metals in the surface water were well below their respective tap water screening levels (PRGs or drinking water standards).

Tail Tracks Landfill: The samples collected from this area during EPA's 1987 RFA sampling event did not contain any constituents at levels significantly above those found in the background samples collected at the time. As per the request for additional investigation in the AOC, Keystone collected soil, groundwater, and surface water samples from the area in 2001. The samples were screened for hazardous constituent metals in electric arc furnace dust (as described in the August 2001 Sampling Plan), which is known be contained within the capped landfill.

The soil and groundwater samples were collected at various points below the toe of the landfill cap, and surface water was collected from the current shoreline of Mud Lake, located south of the landfill. One of the seven soil samples from the Tail Tracks Landfill area slightly exceeded the industrial PRG for lead (750 mg/kg), exhibiting a lead concentration of 790 mg/kg. None of the other samples contained any metals at concentrations above the industrial PRGs. Residential soil PRGs were only exceeded in one other sample from this area, which contained lead at 690 mg/kg and chromium at 220 mg/kg (compared to the residential PRGs of 400 mg/kg and 210 mg/kg, respectively).

None of the measured metal concentrations in the surface water samples from the shore of Mud Lake or from groundwater at the toe of the landfill cap exceeded any of the established tap water PRGs. Two of the surface water samples and two of the groundwater samples contained lead at concentrations above the Federal drinking water standard (15  $\mu$ g/L), however, none of these concentrations exceeded Keystone's NPDES-permitted discharge limit (200  $\mu$ g/L).

Oil Skimmer Basin: To investigate possible impact to this unit by hazardous constituents, Keystone collected samples of influent water to, groundwater downgradient of, and sediment within this unit. The samples were screened for a variety of metal constituents based upon IEPA's NPDES permit requirements, and included all of the analytes detected elsewhere in the Closed-Loop Cooling Pond system during EPA's 1987 RFA. The groundwater samples collected for this investigation were drawn from the five monitor wells located hydraulically downgradient from the entire Closed-Loop Cooling Pond, which are used to monitor compliance with Keystone's NPDES permit for this system (the first part of which is the Oil Skimmer Basin).

The only metal that was detected in any of the influent or groundwater samples for this unit at a concentration above a tap water PRG or Federal drinking water standard was manganese. Concentrations of this non-hazardous constituent metal in the groundwater hydraulically downgradient from the cooling pond system ranged from 0.71 mg/L to 12 mg/L (the tap water PRG for manganese is 0.88 mg/L). The only metal in the sediment sample from the Oil Skimmer Basin that exceeded the industrial PRG was iron (also a non-hazardous constituent). The high iron content in the sediment of this basin (measured at 460,000 mg/kg) results from the settling of residual iron scale from the contact cooling water that is discharged into the unit.

#### 4.3 Data Quality Assurance/Quality Control

The laboratory quality assurance/quality control (QA/QC) protocol included initial calibration verification samples, method blanks, lab duplicates, MS/MSD samples for sample matrix effects, and continuing calibration verification samples. Full data reports containing QA/QC

data collected during the specified SW-846 analysis procedures (instrument blanks, matrix spikes, matrix spike duplicates, etc.) were obtained from PDC. Keystone reviewed these results to ensure that the analytical data were valid and acceptable. All QA/QC sample results are included within the laboratory reports reproduced herein as **Appendix D** through **Appendix N**.

Field duplicates and field rinsate blanks were also analyzed as part of the sampling protocol. Field duplicate sample results are presented alongside the analytical results for the "parent" sample in the data summaries included as **Appendix A**. A total of 44 samples (22 water samples and 22 soil samples), 9 field duplicates, 5 rinsate blanks, 4 field blanks, and 9 MS/MSD samples were collected and analyzed as part of this sampling effort.

## **Section 5 Conclusions**

Characterization sampling was conducted during September, October, and December 2001 to comply with the AOC Keystone entered into with EPA Region 5. The results of this investigation and the historical data collected in 1987 were used to complete an Environmental Indicators Assessment of the facility. This Report has been prepared to accompany Keystone's Environmental Indicators Assessment Report also being submitted in January 2002.

The data obtained in 2001 indicate the presence of lead in the sediment of the F-Pond at concentrations ranging from 210 mg/kg to 3,100 mg/kg, with several samples above the risk-based standards for industrial land use (750 mg/kg). One soil sample at the toe of the Tail Tracks Landfill also contained lead at a concentration (790 mg/kg) just slightly above the EPA Region 9 industrial soil PRG (750 mg/kg). Lead was also observed in several surface water samples and two groundwater samples in the Tail Tracks Area, F-Pond, and East Pond at concentrations above the Federal drinking water standard (15  $\mu$ g/L), but none exceeded Keystone's NPDES permitted discharge limit for this metal (200  $\mu$ g/L). Moderate concentrations of the non-hazardous metals iron and manganese were also detected in various soil, sediment, and water samples during this event.

# Appendix A Summary of 2001 Sampling Results

#### Keystone Steel & Wire Company

Analytical Results Summary for Environmental Indicators Assessment Phase 1 Sampling Event

Samples Collected 09/10/01 to 10/11/01 and 12/06/01

Oil Skimmer Basin Sheen Pond Tail Tracks Landfill F-Pond East Pond

#### US EPA Region 9 Preliminary Remediation Goals (PRGs):

	Tap Water	•
Ground/Surface Water PRG	PRG	Water MCL
Aluminum (mg/l)	36	
Arsenic (mg/l)		0.05
Barium (mg/l)	2.6	
Cadmium (mg/l)	0.018	
Chromium (mg/l)		0.1
Copper (mg/l)	1.4	
iron (mg/l)	11	
Lead (mg/l)		0.015
Manganese (mg/l)	0.88	
Mercury (µg/l)	11	
Nickel (mg/l)	0.73	
Zinc (mg/l)	11	
1,1-Dichloroethane (µg/l)	810	
trans-1,2-Dichloroethene $(\mu g/l)$	120	
Trichloroethene (µg/l)	1.6	5.0
Xylenes (Total) (µg/l)	1,400	
Phenol (mg/l)	22	
Arochlor 1254 (PCBs) (µg/l)	0.034	

				Migration 1	to GW:	
Soil/Sediment PRG		Residential	Industrial	DAF 20	DAF 1	
Aluminum (m	ng/kg-dry)	76,000	100,000	na	na	
Arsenic (n	ng/kg-dry)	22	440	na	na	(noncancer)
Barium (m	ng/kg-dry)	5,400	100,000	1,600	82	
Cadmium (m	ng/kg-dry)	37	810	8	0.4	
Chromium (m	ng/kg-dry)	210	450	38	2	
Copper (m	ng/kg-dry)	2,900	76,000	na	na	
Iron (m	ng/kg-dry)	23,000	100,000	na	na	
Lead (m	ng/kg-dry)	400	750	na	na	
Manganese (m	ng/kg-dry)	1,800	32,000	na	na	
Mercury (m	ng/kg-dry)	23	610	na	na	
Nickel (m	ng/kg-dry)	1,600	41,000	130	7	
Zinc (m	ng/kg-dry)	23,000	100,000	12,000	620	
1,1-Dichloroethane (µ	ug/kg-dry)	590,000	2,100,000	23,000	1,000	
trans-1,2-Dichloroethene (µ	ug/kg-dry)	63,000	210,000	700	30	
Trichloroethene (µ	ug/kg-dry)	2,800	6,100	60	3	
m/p-Xylene (µ	ug/kg-dry)	na	na	na	na	
o-Xylene (µ	ug/kg-dry)	na	na	na	na	
Total xylenes (µ	ug/kg-dry)	210,000	210,000	210,000	10,000	
Arochior 1254 (PCBs) (µ	ug/kg-dry)	220	1000	na	na	
, , -						

Note: DAF = Dilution-Attenuation Factor

(a DAF of 1 assumes no dilution and no natural attenuation of soil leachate)

#### Oil Skimmer Basin Area Groundwater Analysis

	Well ID	CL-1	CL-2	CL-3	CL-4	CL-5	CL-5	BT-15	Field Blank
	Sample No.	1	1	1	1	1	2 (dup)	1	1
	Lab ID	01092683-1	01092683-2	01092683-3	01092683-4	01092683-5	01092683-6	01092683-7	01092683-8
	Sample ID	BCL-1-G-01	BCL-2-G-01	BCL-3-G-01	BCL-4-G-01	BCL-5-G-01	BCL-5-G-02	BT-15-G-01	BFB2-G-01
	Date	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01	09/18/01
	Time	18:00	18:15	17:50	17:40	17:30	17:30	18:40	14:40
Parameter:	PRG <sup>b</sup>	· ·	ļ	į		l		·	
Aluminum (mg/l)	36	0.52	0.1 J	0.068 J	0.04 J	0.016 J	0.015 J	0.35	0.0059 J
Arsenic (mg/l)	0.05°	0.0068	0.0011	0.0024	0.026	0.0082	0.0078	0.0008 J	0.00018 J
Barium (mg/l)	2.6	0.13 J	0.069 J	0.14 J	0.24	0.097 J	0.11 J	0.19 J	0.00027 J
Cadmium (mg/l)	0.018	0.005 U							
Chromium (mg/l)	0.1 °	0.004 J	0.0028 J	0.004 J	0.0035 J	0.0034 J	0.0042 J	0.0026 J	0.00036 J
Copper (mg/l)	1.4	0.0057 J	0.0018 J	0.002 J	0.001 J	0.0014 J	0.0016 J	0.0027 J	0.0003 J
Iron (mg/l)	11	1.9	0.1	0.42	4.6	2.1	2.1	1.9	0.1 U
Lead (mg/l)	0.015°	0.0018 J	0.00019 J	0.00081 J	0.00016 J	0.0011 J	0.0007 J	0.015	0.0002 J
Manganese (mg/l)	0.88	12	0.71	1.8	1.2	5.7	5.4	0.54	0.00039 J
Mercury (µg/l)	11	0.2 U							
	ļ		1		<b>\</b>		<b>{</b>	<b>\</b>	
HEM <sup>a</sup> (mg/l)		6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Phenolics (mg/l)	22	0.01	0.015	0.005_U	0.0089	0.0039 J	0.0069	0.005 U	0.005 U

<sup>&</sup>lt;sup>a</sup> HEM = Hexane Extractable Materials (includes both Oil & Grease and Total Petroleum Hydrocarbons)

<sup>&</sup>lt;sup>b</sup>US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)

U = Analyte not detected at method reporting limit concentration shown.

J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

#### Oil Skimmer Basin Sediment Sample

	Location Oil Skimmer Basin							
	Sample No.	1						
	Lab ID	01093292-1						
	Sample ID	Grab						
	Date	09/28/01						
	Time	09:00						
Parameter:	PRG ª							
Total Solids (%)		69						
10ta 00ta (70)								
Total Metals (mg/kg-dry)								
Aluminum	100,000	490						
Antimony	820	35						
Arsenic	440	1.0 U						
Barium	100,000	22						
Beryllium	2,200	9.7						
Boron	79,000	5.2						
Cadmium	810	0.14 U						
Chromium	450	290						
Cobalt	100,000	28						
Copper	76,000	1,400						
iron	100,000	460,000						
Lead	750	7.1						
Magnesium		590 U						
Manganese	32,000	2,800						
Mercury	610	0.029 U						
Molybdenum	10,000	74						
Nickel	41,000	380						
Selenium	10,000	1.2 U						
Silver	10,000	0.14 U						
Thallium	130	26						
Tin	100,000	56 16						
Titanium	400.000	16 07						
Zinc	100,000	97						
BOD b (mg/kg-dry)		6,700						
COD c (mg/kg-dry)		240,000						
HEM <sup>d</sup> (mg/kg-dry)		67,000						

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG)

#### Data Flags:

U = Analyte not detected at method reporting limit concentration shown.

<sup>&</sup>lt;sup>b</sup> BOD = Biochemical Oxygen Demand

<sup>&</sup>lt;sup>c</sup>COD = Chemical Oxygen Demand

<sup>&</sup>lt;sup>d</sup> HEM = Hexane Extractable Materials (includes both Oil & Grease and Total Petroleum Hydrocarbons)

#### Oil Skimmer Basin Influent Water

	Node	CL #2		CL #3	
	Sample No.	1		1	
	Lab ID	01101807-1	- 1	01101807-2	
	Sample ID	Grab	- 1	Grab	
	Date	10/09/01		10/09/01	
	Time	13:43		13:50	
Parameter:	PRG <sup>a</sup>				
Arsenic (mg/l)	0.05 <sup>b</sup>	0.02	υĮ	0.02	U
Barium (mg/l)	2.6	0.04		0.038	
Boron (mg/l)	3.3	0.33	ı	0.33	
Cadmium (mg/l)	0.018	0.002	υĮ	0.002	U
Chromium (mg/l)	0.1 <sup>b</sup>	0.004	υĮ	0.004	U
Copper (mg/l)	1.4	0.005	υl	0.025	1
Iron (mg/l)	11	0.47		1.5	
Lead (mg/l)	0.015 <sup>b</sup>	0.01	υĮ	0.01	U.
Manganese (mg/l)	0.88	0.071	ı	0.066	
Mercury (µg/l)	11	0.2	υĮ	0.2	U
Nickel (mg/l)	0.73	0.016	Ì	0.027	
Selenium (mg/l)	0.18	0.05		0.05	U
Silver (mg/l)	0.18	0.01		0.01	U
Zinc (mg/l)	11	0.006	미	0.006	U
		8.18		8.22	
pH			ŀ	680	
TDS <sup>c</sup> (mg/l)	· .	670	١		
TSS <sup>d</sup> (mg/l)		5.0	١	22	
BOD (mg/l)		3.0	ı	3.0	
HEM <sup>f</sup> (mg/l)		6.0	ᄞ	5.0	U

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

#### Data Flags:

U = Analyte not detected at method reporting limit concentration shown.

<sup>&</sup>lt;sup>b</sup> Drinking Water MCL (no PRG listed)

<sup>&</sup>lt;sup>c</sup>TDS = Total Dissolved Solids

<sup>&</sup>lt;sup>d</sup>TSS = Total Suspended Solids

<sup>&</sup>lt;sup>e</sup> BOD = Biochemical Oxygen Demand

<sup>&</sup>lt;sup>f</sup>HEM = Hexane Extractable Materials (includes Oil & Grease and Total Petroleum Hydrocarbons)

#### **Sheen Pond Groundwater Analysis**

	Well ID	T-5	T-19B	T-19B	Field Blank	Rinse Blank a
	Sample No.	1	1	2 (dup)	1	1
Lab ID		01092688-1	01092688-2	01092688-3	01092688-4	1092688-5
	Sample ID	NT-5A-G-01	NT-19B-G-01	NT-19B-G-02	NFB-G-01	NRB-G-01
	Date	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01
	Time	12:45	13:10	13:15	11:45	11:55
Parameter:	PRG <sup>b</sup>					
Arsenic (mg/L)	0.05 °	0.00085 J	0.0016	0.0005 J	0.001 U	0.001 U
Cadmium (mg/L)	0.018	0.005 U	0.005 U	0.005 U	0.018	0.005 U
Chromium (mg/L)	0.1 °	0.0086 J	0.0047 J	0.001 J	0.01 U	0.01 U
Copper (mg/L)	1.4	0.0045 J	0.0084 J	0.00034 J	0.025 U	0.025 U
Lead (mg/L)	0.015°	0.0074	0.0066	0.0005 J	0.001 J	0.003 U
Zinc (mg/L)	11	0.022	0.09	_0.01 J	0.016 J	0.0073 J

	Well ID	T-5	T-19B	T-19B	Field Blank	Rinse Blank a
	Sample No.	1	1	2	1	1
	Lab ID	01092688-7	01092688-8	01092688-9	01092688-6	01092688-5
	Sample ID	NT-5A-G-01	NT-19B-G-01	NT-19-G-02	NFB-G-01	NRB-G-01
	Date	10/11/01	10/11/01	10/11/01	10/11/01	09/19/01
	Time	11:40	12:40	12:50	10:30	11:55
Parameter:	PRG <sup>b</sup>					
Aroclor 1254 (µg/L)	0.034	1 U	1 U	_ 1 U	1 U	1 U

<sup>&</sup>lt;sup>a</sup> Equipment rinse blank for Sheen Pond sediment sampling equipment. <sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)

#### **Sheen Pond Soil Analysis**

	Node ID	N1	N2	N2	N3	N4	N5
	Sample No.	1   1		2 (dup)	1	1	1 1
	Lab ID	01092691-1	01092691-2	01092691-3	01092691-4	01092691-5	01092691-6
	Sample ID	N-01 <b>-</b> S-01	N-02-S-01	N-02-S-02	N-03-S-01	N-04-S-01	N-05-S-01
	Date	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01
	Time	13:55	14:00	14:02	14:15	14:25	14:35
Parameter:	PRG <sup>a</sup>				.,		
Moisture (%)		16	21	21	18	19	16
Arsenic (mg/kg-dry)	440	10	8.9	6.7	6.8	6.5	3.8
Cadmium (mg/kg-dry)	810	1.9	0.75 J	0.63 J	1.6	0.57 J	0.8 J
Chromium (mg/kg-dry)	450	98 C	24 C	24 C	89 C	22 C	26 C
Copper (mg/kg-dry)	76,000	83	20	18	23	17	18
Lead (mg/kg-dry)	750	140	26	28	50	26	27
Zinc (mg/kg-dry)	100,000	260	110	110	200	100	110
Aroclor 1254 (µg/kg-dry)	1,000	61 J	200 U	18 J	100 J	28 J	54 J

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG) (Note: all values are also below their respective Residential PRGs)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.
- C = Result qualified due to batch control sample failing to meet the required acceptance critera.

#### Tail Tracks Landfill Area Groundwater Analysis

•	Well ID	TL-1	TL-2	TL-3	TL-3	TL-4	W-7	Field Blank	Rinse Blank a
	Sample No.	1	1	1	2 (dup)	1	1	1	1
	Lab ID	01092694-1	01092694-2	01092694-3	01092694-4	01092694-5	01092694-6	01092694-7	01092694-8
	Sample ID	TTL-1-G-01	TTL-2-G-01	TTL-3-G-01	TTL-3-G-02	TTL-4-G-01	TW-7-G-01	TFB-G-01	TRB-S-01
	Date 09/19/01 09/19/01		09/19/01	09/19/01 09/19/01		09/19/01	09/19/01	09/19/01	
	Time	15:10	15:17	15:25	15:25	15:35	14:55	07:40	07:40
Parameter:	PRG⁵								
Cadmium (mg/L)	0.018	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium (mg/L)	0.1 <sup>c</sup>	0.0056 J	0.0082 J	0.0066 J	0.0068 J	0.0095 J	0.0029 J	0.00057 J	0.0002 J
Lead (mg/L)	0.015 <sup>c</sup>	0.00064 J	0:021	0.0088	0.0078	0.2	0.0005 J	0.003 U	0.003 U
Nickel (mg/L)	0.73	0.0092	0.011	0.0064	0.0049 J	0.012	0.0074	0.005 U	0.005 U
Zinc (mg/L)	11	0.012 J	0.1	0.025	0.049	0.15	0.0054_J	0.0045 J	0.0024 J

<sup>&</sup>lt;sup>a</sup> Equipment rinse blank for Tail Tracks Landfill Area soil sampling equipment.

<sup>&</sup>lt;sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)

U = Analyte not detected at method reporting limit concentration shown.

J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

#### Tail Tracks Landfill Area Soil Analysis

	Node ID	T1	T2	T3	T4	T5	T5	T6
	Sample No.	1	1	1	1	1	2 (dup)	1
	Lab ID	01092695-1	01092695-2	01092695-3	01092695-4	01092695-5	01092695-6	01092695-7
	Sample ID	T-01-S-01	T-02-S-01	T-03-S-01	T-04-S-01	T-05-S-01	T-05-S-02	T-06-S-01
	Date	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01	09/19/01
	Time	11:00	_10:50	10:30	10:20	09:55	10:00	09:45
Parameter:	PRG a							
Moisture (%)		32	20	19	29	34	36	13
Cadmium (mg/kg-dry)	810	2.6	2	0.99 J	6.6	4.5	3.1	16
Chromium (mg/kg-dry)	450	43	58	27	59	. 47	38	220
Lead (mg/kg-dry)	750	220	110	68	790	240	150	690
Nickel (mg/kg-dry)	41,000	26	22	25	24	36	33	95
Zinc (mg/kg-dry)	100,000	660	480	150	1,800	910	550	4,200

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG)

(Note: all values except Pb at T4, and Pb and Cr at T6 are also below their respective Residential PRGs)

(Residential Pb = 400 mg/kg)

(Residential Cr = 210 mg/kg)

#### Data Flags:

J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

#### **F-Pond Surface Water Analysis**

	Node	F7	F7	F8	Rinse Blank	Trip Blank	Rinse Blank a
	Sample No.	1	2 (dup)	1	1	1	1
	Lab ID	01092801-4	01092801-5	01092801-6	01092801-2	01092801-1	01092801-3
	Sample ID	F07-W-01	F07-W-02	F08-W-01	FRB-W-01	Trip Blank	FRB-D-01
	Date	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01
	Time	12:30	12:30	15:15	10:10	07:00	10:00
Parameter:	PRG⁵						
Aluminum (mg/l)	36	0.1 J	0.076 J	0.087 J	0.0094 J	na	0.014 J
Barium (mg/l)	2.6	0.034 J	0.034 J	0.038 J	0.00027 J	na	0.00083 J
Cadmium (mg/l)	0.018	0.005 U	0.005 U	0.005 U	0.005 U	na	0.005 U
Chromium (mg/l)	0.1 <sup>c</sup>	0.0065 J	0.0055 J	0.0046 J	0.0011 J	na	0.01 U
Copper (mg/l)	1.4	0.0092 J	0.0084 J	0.0021 J	0.0026 J	na	0.025 U
Iron (mg/l)	11	16	15	0.19	0.77	na	0.018 J
Lead (mg/l)	0.015°	0.047	0.038	0.029	0.003 U	na	0.003 U
Manganese (mg/l)	0.88	16	16	0.2	0.00053 J	na	0.00046 J
Mercury (μg/l)	11	0.2 U	0.2 U	0.2 U	0.2 U	na	0.2 U
Zinc (mg/l)	11	0.27	0.22	0.026	0.0019 J	na	0.002 J
1,1-Dichloroethane (µg/l)	810	10 U	10 U	10 U	10 U	10 ປ	10 U
trans-1,2-Dichloroethene (µg/l)	120	10 U	10 U		10 U	10 U	10 U
Trichloroethene (µg/l)	1.6	1.6 U	1.6 U	2	1.6 U	1.6 U	
Xylenes (Total) (μg/l)	1,400	10 U	10 U	10 U	1 <u>0</u> U	10 U	

na = not applicable

(Note: EPA drinking water std. For TCE is  $5 \mu g/L$ .)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

<sup>&</sup>lt;sup>a</sup> Equipment rinse blank for F-Pond sediment sampling equipment. <sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)



	Node ID	F1		F1	F2	F3	F4	F5	F6
	Sample No.	1		2 (dup)	1	1	1	1	1
	Lab ID	01092802-2		01092802-1	01092802-3	01092802-4	01092802-5	01092802-6	01092802-7
	Sample ID	F-01-D-01		F-01-D-02	F-02-D-01	F-03-D-01	F-04-D-01	F-05-D-01	F-06-D-01
	Date	09/21/01		09/21/01	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01
	Time	12:30		12:30	14:15	_14:00	15:00	14:40	15:15
Parameter:	PRG <sup>a</sup>								
Moisture (%)		86		80	73	81	55	73	75
Aluminum (mg/kg-dry)	100,000	21,000		16,000	18,000	31,000	19,000	36,000	26,000
Barium (mg/kg-dry)	100,000	160	J	120 J	170	200 J	240	220	150 J
Cadmium (mg/kg-dry)	810	3.6	J	2.8 J	3.2 J	2.2 J	1.6 J	3.7	2.2 J
Chromium (mg/kg-dry)	450	170		130	70	95	51	74	68
Copper (mg/kg-dry)	76,000	210		140	63	140	47	<b>S</b> 5	64
Iron (mg/kg-dry)	100,000	140,000		100,000	28,000	63,000	21,000	41,000	36,000
Lead (mg/kg-dry)	750	1,600		1,200	780	530	3,100	210	320
Manganese (mg/kg-dry)	32,000	9,300		6,500	1,600	4,200	760	440	560
Mercury (mg/kg-dry)	610	0.28	U	0.20 U	0.15 U	0.21 U	0.07 J	0.18	0.18
Zinc (mg/kg-dry)	100,000	11,000		8,500	1,200	1,800	440	630	560
1,1-Dichloroethane (µg/kg-dry)	2,100,000	36	UFR					18 U	20 U
m/p-Xylene (µg/kg-dry)		36	UF	25 U		26 U	130	18 U	20 U
o-Xylene (µg/kg-dry)		36	UF	<u>25</u> ∪	18 U	26 U	120	18 U	20 U
Total xylenes (µg/kg-dry)	210,000	71	UF	50 U	37 U	53 U	240	37 U	
trans-1,2-Dichloroethene (µg/kg-dry)	210,000	36	UF	25 U		1		18 U	
Trichloroethene (µg/kg-dry)	6,100	36	UFR	25 U	18 U	26 U	57	18 U	20 U

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG)

(Note that all values except for Iron, Lead and Manganese also meet residential PRGs.)

(Residential PRGs for: Fe = 23,000 mg/kg; Pb = 400 mg/kg; and Mn = 1,800 mg/kg.)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.
- F = Result qualified due to internal standard result outside the required acceptance criteria.
- R = Result qualified due matrix spike/matrix spike duplicate (MS/MSD) results outside the required acceptance criteria.

#### **East Pond Surface Water Analysis**

	Node	A5	A5	A6	Field Blank	Rinse Blank <sup>a</sup>
	1	2 (dup)	1	1	1	
	01092804-1	01092804-2	01092804-3	01092804-5	01092804-4	
	A-05-W-01	A-05-W-02	A-06-W-01	ARB-W-01	ARB-D-01	
	Date	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01
	Time	11:00	11:15	11:45	10:10	10:10
Parameter:	PRG <sup>b</sup>					
Chromium (mg/l)	0.1 °	0.018	0.018	0.02	0.00028 J	0.00038 J
Copper (mg/l)	1.4	0.0022 J	0.0017 J		0.00036 J	0.025 U
Lead (mg/l)	0.015°	0.017	0.016	0.05	0.003 U	0.003 U
Zinc (mg/l)	11	0.0091 J	0.0088 J	0.012 J	0.0017 J	0.0023 J

<sup>&</sup>lt;sup>a</sup> Equipment rinse blank for East Pond sediment sampling equipment.

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.

<sup>&</sup>lt;sup>b</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

<sup>&</sup>lt;sup>c</sup> Drinking Water MCL (no PRG listed)

#### **East Pond Sediment Analysis**

	Node ID	A1	A1	A2	A3	A4
	Sample No.	1	2 (dup)	1	1	1
	Lab ID	01092803-1	01092803-2	01092803-3	01092803-4	01092803-5
	Sample ID	A-01-D-01	A-01-D-02	A-02-D-01	A-03-D-01	A-04-D-01
	Date	09/21/01	09/21/01	09/21/01	09/21/01	09/21/01
	Tim <u>e</u>	11:15	11:20	12:05	11:45	11:30
Parameter:	PRG <sup>a</sup>			,		
Moisture (%)		54	45	59	56	60
Chromium (mg/kg Dry)	450	70	62	83	59	58
Copper (mg/kg Dry)	76,000	7.4 J	6.4 J	13	21	16
Lead (mg/kg Dry)	750	67	64	93	110	60
Zinc (mg/kg Dry)	100,000	120	100	160	320	150

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Industrial Preliminary Remediation Goal (PRG) (Note: all values are also below the respective Residential PRGs)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.
- C = Result qualified due to batch control sample failing to meet the required acceptance critera.
- F = Result qualified due to internal standard result outside the required acceptance criteria.

#### **Tail Tracks Area Surface Water Analysis**

	Node ID	TO1	TO2	TO4	
	Sample No.	1	1	1	
	01121541-3	01121541-2	01121541-1		
	TO-1	TO-2	TO-4		
	Date	12/06/01	12/06/01	12/06/01	
	Time	15:30_	15:15	15:00	
Parameter:	PRG <sup>a</sup>				
Cadmium (mg/l)	0.018	0.002 U	0.002 U	0.002 U	
Chromium (mg/l)	0.1 b	0.004 U	0.05	0.011	
Nickel (mg/l)	0.73	0.027	0.005 U	0.005 U	
Lead (mg/l)	0.015 <sup>b</sup>	0.09	0.05	0.01 U	
Zinc (mg/l)	11	0.45	0.027	0.15	

<sup>&</sup>lt;sup>a</sup> US EPA Region 9 Tap Water Preliminary Remediation Goal (PRG)

- U = Analyte not detected at method reporting limit concentration shown.
- J = Analyte detected below calibration range. Reported concentration is estimated based upon extrapolation below calibration range.
- C = Result qualified due to batch control sample failing to meet the required acceptance critera.
- F = Result qualified due to internal standard result outside the required acceptance criteria.

<sup>&</sup>lt;sup>b</sup> Drinking Water MCL (no PRG listed)

### Appendix B Soil Boring Logs

	Illinois Environmental Protection Agency			Field Boring Log				g L	og	Page1 of1	
	Site File No	o1430050001	Peoria		Boring	No.		Α-	01		Monitor Well No. NA
	Site File Na	ame Keystone Steel & Wire Co.			Surfac	ce Elev	ation	· _=	-444	ft.	Completion Depth NA
7	Fed. ID. No	b. <u>ILD000714881</u>			Auger	Depth		0	.50	ft.	Rotary Depth
	Quadrangle	e <u>Peoria West</u> Sec. <u>31</u> T. <u>8</u>	<u>8N</u> R. <u>8</u>	E_	Date:	Start _	_	9/21	1/01		Finish 9/21/01
۱	Site	n 4609427 ran 1	0100 70								
1		x) <u>16084.37</u> E.(Y) <u>1</u> 40 • <u>38 ' 0 "</u> Longitude <u>89 • </u>		23 *		SA		PLE		_	PERSONNEL
		ation East Pond (~10' NE of Site Coord.)				뀚	8	EER	NTS)		G - JA Duwelius D - Scoop
	_	uipment Scoop			SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	PENETROMETER N VALUES (BLOW COUNTS)	38	HNU NGS	D- Scoop H- RE Aten H-
		· · · · · · · · · · · · · · · · · · ·	Graphic Log	Depth in feet	AMPI	AMPL		ENE		VA o	H-
	Elev.	DESCRIPTION OF MATERIALS Silt, white & gray (10YR8/1) & (10YR6/1),	5   0		S	S U	<i>5</i> 62	<u> </u>	2 5	OE	REMARKS
-	-	wet, ooze contains organic matter (pond		<u>-</u>							
1		sediment). Total depth 0.50'.									Samples: A-01-D-01 A-01-D-02 MS/MSD
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Illinois Environmental Protection Agency			d Boring L	.og	Page1	of <u>1</u>
Site File No. 1430050001 County Pe	oria	Boring No.	A-02		Monitor Well No	<u>NA</u>
Site File Name Keystone Steel & Wire Co.						
Fed. ID. No. <u>ILD000714881</u>		Auger Dept	h0.50	ft.	Rotary Depth	
Quadrangle Peoria West Sec. 31 T. 8N	_ R. <u>8E</u>	Date: Start	9/21/01		Finish 9/21/01	
Site						
Coord. N.(X)15982.45 E.(Y)103		S	AMPLES	-	PERSONI	NEL
Latitude 40 • 38 ' 0 • Longitude 89 •		<u> </u>	101		G - JA Duwelius	
Boring Location <u>East Pond (~10' W. of Site Coord.)</u>		SAMPLE NO.	SAMPLE RECOVERY (%) PENETROMETER N VALUES (BLOW COUNTS)	OS S	D - Scoop H - RE Aten	
Drilling Equipment Scoop	Graphic Log Depth	SAMPLE NO.	NET	OVA or HNU READINGS	Н-	
Elev. DESCRIPTION OF MATERIALS	ء ۾ ڳو	8 8	8 H H Z E	Q ₩	REMARI	<u>KS</u>
Siit, white & grayish brown (10YR7/1) & (10YR5/2), wet, ooze, organic matter (pond						
sediment). Total depth 0.5'.					Sample: A-02-D-01	
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		Illinois Environmental Protection Agency			Field Boring Log				og	Page	1	of1		
	Site File No	o1430050001	Peo	ria		Boring	g No.		<u>_A</u>	-03		Monitor Well	No	NA
	Site File Na	ame Keystone Steel & Wire Co.				Surfac	ce Ele	vation	· _	~444	1 ft.	Completion [	Depth _	<u>NA</u>
	Fed. ID. No	b. <u>ILD000714881</u>				Augei	r Depi	th	. (	<u>50.</u>	ft.	Rotary Depth	ı	
	Quadrangle	e <u>Peoria West</u> Sec. <u>31</u> T	8N	R8	3E	Date:	Start		9/2	1/01		Finish	9/21/01	
	Site													
	Coord. N.()	() <u>15950.00</u> E.(Y)	1023	3.47				AMF	OI F	S	<u> </u>	PFR	SONI	JEI I
	Latitude	40 38 0 Longitude 89 •	38	<u> </u>	<u>23 "</u>			$r \rightarrow r$				G - JA Duw		<u></u>
	Boring Loc	ation <u>East Pond (~10' E. of Site Coord.)</u>			<del></del> _	Š.	TYPE	SAMPLE RECOVERY (%)	PENETROMETER	N VALUES (BLOW COUNTS)	⊇ Si	D - Scoop H - RE Aten		
	Drilling Equ	ipment Scoop		Graphic Log	Depth in feet	SAMPLE NO.	SAMPLE	A PLE	ETR.	ALUE	OVA or HNU READINGS	H-		
	Elev.	DESCRIPTION OF MATERIAL	S	رة ق	⊒. <u>©</u>	SAN	SA	S.A.	PE	N E	S.S.	RE	MARI	(S
	_	Silt, white & grayish brown (10YR8/1) & (10YR5/2), wet, ooze, contains organic			_									.
	_	matter (pond sediment). Total depth 0.50'.										Sample: A-03	3-D-01	
		Total depth 0.50.												
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	Illinois Environmental Protection Agenc	y	Field Boring Log Page 1 of 1
	Site File No. 1430050001 County <u>Peoria</u>		Boring No. A-04 Monitor Well No. NA
	Site File Name Keystone Steel & Wire Co.		Surface Elevation ~444 ft. Completion Depth NA
	Fed. ID. No. <u>ILD000714881</u>		Auger Depth 0.50 ft. Rotary Depth
	Quadrangle Peoria West Sec. 31 T. 8N R.	8E	Date: Start 9/21/01 Finish 9/21/01
	Site Coord. N.(X) 16021.28 E.(Y) 10262.45		
	Latitude 40 • 38 · 0 • Longitude 89 • 38 ·	23 "	SAMPLES PERSONNEL
	Boring Location East Pond (~10' E. of Site Coord.)	<del>_</del>	G - JA Duwelius  O
	Drilling Equipment Scoop  Elev. DESCRIPTION OF MATERIALS	et et	SAMPLE NO. SAMPLE TYPE SAMPLE TYPE SAMPLE TYPE SAMPLE TYPE RECOVERY (%) PENETROMETER N VALUES OVA or HNU READINGS H H D D H H D D H H D D H H D D SSAMPLE TYPE SAMPLE NO.
	Elev. DESCRIPTION OF MATERIALS	Depth in feet	REMARKS
	Silt, white & gray (10YR8/1) & (10YR6/1), wet, ooze, contains organic matter (pond	-	
1	sediment). Total depth 0.5'.	<b>f</b>	Sample: A-04-D-01
	Total deptil 0.5.		
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Illinois Environmental Protection A	gency	Field Bo	ring Log	Page <u>1</u> of <u>1</u>
Site File No. 1430050001 County Pe	oria	Boring No	F-01	Monitor Well No. NA
Site File Name Keystone Steel & Wire Co.		Surface Elevation	~442 ft.	Completion Depth NA
Fed. ID. No. <u>ILD000714881</u>		Auger Depth	0.50 ft.	Rotary Depth
Quadrangle Peoria West Sec. 36 T. 8N	_ R. <u>_ 7E</u>	Date: Start	9/21/01	Finish 9/21/01
Site Coord. N.(X) 15499.82 E.(Y) 925	53,46			
Latitude 40 37 53 Longitude 89 3		SAMP		PERSONNEL
Boring Location F-Pond (~10' S. of Site Coord.)		SAMPLE NO. SAMPLE SAMPLE RECOVERY (%)	PENETROMETER N VALUES (BLOW COUNTS) OVA or HNU READINGS	G - JA Duwelius D - Scoop
Drilling Equipment Scoop		SAMPLE NO. SAMPLE SAMPLE RECOVERY (	N VALUES (BLOW COUNTY) OVA OF HIND READINGS	H - RE Aten
	Graphic Log Depth in feet	SAMPLE SAMPLE SAMPLE RECOVE	PENE NVAL BLOV EAD	REMARKS
Elev. DESCRIPTION OF MATERIALS  Silt (organic), black (10YR2/1), wet, ooze,		0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	2902	REWARKS
non-calcareous, contains abundant plant material (pond sediment).				0
Total depth 0.5'.			1.	Sample: F-01-D-01 & MS/MSD, F-01-D-02
	1			
		1		
(050236)	<del></del>			

Illinois Environmental Protection Agency	Field Boring Log Page 1	_ of1
Site File No1430050001 County Peoria	Boring No. F-02 Monitor Well No.	NA
Site File Name Keystone Steel & Wire Co.	Surface Elevation ~442 ft. Completion Depth	NA
Fed. ID. No. <u>ILD000714881</u>	Auger Depth0.50 ft. Rotary Depth	
Quadrangle Peoria West Sec. 36 T. 8N R. 7E	Date: Start9/21/01 Finish9/21/0	1
Site Coord. N.(X)15301.33		
Latitude 40 37 53 Longitude 89 38 39 "	SAMPLES PERSON	INEL
Boring Location F-Pond (~10' W. of Site Coord.)	ய இ ப் C G - JA Duwelius	
	SAMPLE TYP	
	SAMPLE SAMPLE SAMPLE SAMPLE NO OVA OCH H H H H H H H H H H H H H H H H H H	IV C
Elev. DESCRIPTION OF MATERIALS O CONTROL Silt (organic), black (10YR2/1), wet, ooze,	REMAR	ino
non-calcareous, contains abundant plant material (pond sediment).	500 704	
Total depth 0.5'.	Sample: F-02-D-01	
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	Illinois Environmental Protection Agency Field Boring Log Page1 of	Page1 of1	
\ ,	Site File No. 1430050001 County <u>Peoria</u> Boring No. <u>F-03</u> Monitor Well No. <u>NA</u>		
1	Site File Name <u>Keystone Steel &amp; Wire Co.</u> Surface Elevation <u>~442 ft.</u> Completion Depth <u>NA</u>		
7,	Fed. ID. No. <u>ILD000714881</u> Auger Depth <u>0.50 ft.</u> Rotary Depth		
(	Quadrangle <u>Peoria West</u> Sec. <u>36</u> T. <u>8N</u> R. <u>7E</u> Date: Start <u>9/21/01</u> Finish <u>9/21/01</u>		
	Site		
1	Coord. N.(X) 15244.79 E.(Y) 9206.27 SAMPLES PERSONNEL		
'	atitude 40 37 53 Longitude 89 38 39 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		
1	Actitude 40 37 53 Longitude 69 38 Soring Location F-Pond (~10' E. of Site Coord.)  Corlining Equipment Scoop  Elev. DESCRIPTION OF MATERIALS  DESCRIPTION OF MATERIALS  REMARKS		
	Drilling Equipment Scoop  Elev. DESCRIPTION OF MATERIALS  Solution Scoop  Elev. DESCRIPTION OF MATERIALS  Solution Scoop  H- RE Aten  H-  REMARKS	ľ	
	Silt (organic), black (10YR2/1), wet, ooze, non-calcareous, contains abundant plant	: {	
	material (pond sediment).  Total depth 0.5'.  Sample: F-03-D-01		
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	Illinois Environmental Protection Agency			Field Boring Log			.og	Page1 of1					
	Site File No. 1430050001	County	Pec	ria		Boring	g No.	,	F:	-04		Monitor Well No.	NA
	Site File Name Keystone Steel 8												
	Fed. ID. No. <u>ILD000714881</u>					Auger	r Depti	h	C	0.50	ft.	Rotary Depth	
	Quadrangle Peoria West	Sec. <u>36</u> T.	8N	_ R	7E	Date:	Start		9/2	1/01		Finish 9/21/01	
Ì	Site												
	Coord. N.(X) 15016.3	•					SA	AMF	PLE	S		PERSON	VEL
	Latitude 40 • 37 · 53	_		8 :	39 *			$\overline{}$				G - JA Duwelius	
	Boring Location F-Pond (~10' S			CO.		SAMPLE NO. SAMPLE TYPE SAMPLE SAMPLE	ERY (	PENETROMETER N VALUES	SOUN	OVA or HNU READINGS	D - Scoop H - RE Aten		
	Drilling Equipment Scoop			Graphic Log	Depth in feet		M 8		ALUI OW (	ADIN	н-		
	Elev. DESCRIPTION			٤٥	≘. ۵	Ϋ́	VS	& 뿝	퓝	ž ē	8분	REMARK	(S
	Silt, white & gray (10 wet, ooze, contains	plant material (pond			<u>-</u>								
	sediment) (white - ca	dcareous).									-	Sample: F-04-D-01	
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Illinois Environmental Protection A	gency	Field Boring Log Page 1 of	1
Site File No1430050001	oria	Boring No. F-05 Monitor Well No. NA	<u> </u>
Site File Name Keystone Steel & Wire Co.			
Fed. ID. No. <u>ILD000714881</u>		Auger Depth0.50 ft. Rotary Depth	
Quadrangle <u>Peoria West</u> Sec. <u>36</u> T. <u>8N</u>	_ R. <u>7E</u>	Date: Start 9/21/01 Finish 9/21/01	
Site Coord. N.(X)14838.44	60. <u>26</u>		
Latitude 40 • 37 53 * Longitude 89 • 3		SAMPLES PERSONNEL	
Boring Location F-Pond (~10' NE of Site Coord.)		교   중 본   은   G - JA Duwelius	
Drilling Equipment Scoop		SAMPLE TYP SAMPLE TYP	
	Graphic Log Depth	SAMPLE SA	
Elev:   DESCRIPTION OF MATERIALS   Silt (organic), black (10YR2/1), wet, ooze,		S S S S E E Z S S INCINIANTO	
non-calcareous contains abundant plant material (pond sediment).	<del>                                     </del>	Sample: F-05-D-01	
Total depth 0.5'.		Sample: P-03-0-01	
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Γ	Illinois Environmental Protection Age	ency		ı	Field	Bor	ing L	.og	Page1 of1_	_
	Site File No. <u>1430050001</u> County <u>Peorial</u>	a		Borin	g No.		F-06		Monitor Well No. NA	_
1	Site File Name Keystone Steel & Wire Co.									
ĺ	Fed. ID. No. <u>ILD000714881</u>			Auge	r Depth	·	0.50	ft.	Rotary Depth	_
	Quadrangle Peoria West Sec. 36 T. 8N	R. <u>7</u> E	<u> </u>	Date:	Start		9/21/01		Finish 9/21/01	_
	Site 44702.40 5.00 0405	00								
1	Coord. N.(X) 14703.48 E.(Y) 9405.  Latitude 40 37 53 Longitude 89 38		9 "		SA	AMPI			PERSONNEL	$\Box$
1	Boring Location F-Pond (~10' W. of Site Coord.)		<u> </u>		Ä	SAMPLE RECOVERY (%) PENETROMETER	N VALUES (BLOW COUNTS)	_	G - JA Duwelius D - Scoop	
1		ı L		SAMPLE NO.	SAMPLE TYPE	SAMPLE RECOVERY (	V COL	OVA or HNU READINGS	H - RE Aten	
	Elev. DESCRIPTION OF MATERIALS	Graphic Log	Deptining feet	SAME	SAME	RECC RECC	N V V V	OVA (	REMARKS	-
	Silt (organic), black (10YR2/1), wet, ooze,			1				- <del>-</del>	17EIW WATO	1
	non-calcareous, contains abundant plant material (pond sediment).						-		Sample: F-06-D-01	1
	Total depth 0.5'.	ĺ							Gample: 1-00-5-01	
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Γ		Illinois Environmental Protection A	gency		ı	Field	d Bo	orir	ıg L	.og	Pa	ige 1	of1
	Site File No	o1430050001	oria		Borin	g No.		N	-01_		Monitor	Well No.	NA
		me Keystone Steel & Wire Co.											
	Fed. ID. No	. <u>ILD000714881</u>			Auge	r Dept	h		1.00	ft.	Rotary	Depth	
	Quadrangle	Peoria West Sec. 25 T. 8N	_ R <u>7</u> E		Date:	Start		9/1	9/01		Finish _	9/19/01	
	Site	•					1						
	Coord. N.()			_		S	AM	PLE	-S		PERSONNEL		
	Latitude 40 · 38 · 43 · Longitude 89 · 38			<u>33 "</u>			8					Duwelius	
1		ation Sheen Pond	6	<del></del> .	Š	TYPE	EK.	PENETROMETER	N VALUES (BLOW COUNTS)	-INU GS		wei Aten	Í
	Drilling Equ	ipment Trowel	Graphic Log	Depth in feet	SAMPLE NO.	SAMPLE	SAMPLE RECOVERY	NETF	/ALUI	OVA or HNU READINGS	н-		
1	Elev.	DESCRIPTION OF MATERIALS	٥٩١	<u>≃.⊆</u>	δ	8	\$₩	E	Z E	OV RE		REMARK	S
		Silty clay, yellowish brown (10YR5/6), moist, friable, slightly calcareous.											ļ
	_				ļ		-				Sample:	N-01-S-01	
	<b>— 446.1</b>	Total depth 1.0'.		- 1									
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Illinois Environmental Protection A	gency	Field	d Boring L	og	Page 1	of <u>1</u>		
Site File No. <u>1430050001</u> County <u>Pe</u>	oria	Boring No.	N-02		Monitor Well No.	NA		
Site File Name Keystone Steel & Wire Co.			vation <u>439.0</u>	1 ft.	Completion Depth	NA		
Fed. ID. No. <u>ILD00</u> 0714881					Rotary Depth			
Quadrangle Peoria West Sec. 25 T. 8N	_ R. <u>7E</u>	Date: Start	9/19/01		Finish <u>9/19/01</u>			
Site								
Coord. N.(X)21727.46 E.(Y)934		S	AMPLES	PERSONI	VEL			
Latitude 40° 38' 43° Longitude 89°					G - JA Duwelius			
Boring Location Sheen Pond		SAMPLE NO.	SAMPLE RECOVERY (%) PENETROMETER N VALUES (BLOW COUNTS)	⊒SS	D - Trowel H - RE Aten			
Drilling Equipment Trowel	Graphic Log Depth in feet	SAMPLE NO.	MPLE COVE NETR	OVA or HNU READINGS	Н-			
Elev. DESCRIPTION OF MATERIALS	- 6 P B -	SAI SAI	<u> </u>	오뮈	REMARI	<s< td=""></s<>		
Silty clay, yellowish brown (10YR5/6), moist, friable, slightly calcareous.			-					
IF I					Samples: N-02-S-01, N-02-S-02	MS/MSD		
-438.0 Total depth 1.0'.	1				14-02-0-02			
Total depth 1.0.		1 1						
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	Ilinois Environmental Protection A	gency	Fie	eld Bori	ng Log	Page1 of1
Site File No.	1430050001 County Peo	ria	Boring N	lo	N-03	Monitor Well No. NA
· Site File Na	me Keystone Steel & Wire Co.		Surface	Elevation	437.93 ft	Completion Depth NA
Fed. ID. No.	ILD000714881		Auger D	epth	1.00 ft	Rotary Depth
Quadrangle	Peoria West Sec. 25 T. 8N	R. <u>7E</u>	Date: St	art9	/19/01	Finish <u>9/19/01</u>
Site	04400.00	0.70				
Coord, N.(X)				SAMPL	ES .	PERSONNEL
}	40 ° 38 ' 43 " Longitude 89 ° 3	5	y.	3%) ETER	ZIS)	G - JA Duwelius
i	pment Trowel	Ö	SAMPLE NO.	SAMPLE 11 FE SAMPLE RECOVERY (%)	N VALUES (BLOW COUNTS) OVA or HNU READINGS	D- Trowel H- RE Aten
l		Graphic Log Depth in feet	AMPL	AMPL ECOV ENET	VALL VA or VA or EADI?	H-
Elev.	DESCRIPTION OF MATERIALS Silty clay loam, yellowish brown (10YR5/6),	 	8	3 03 EZ E	2 4 0 2	REMARKS
	moist, friable, slightly calcareous.					
						Sample: N-03-S-01
436.9	Total Depth 1.0'.	1		+		
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		Illinois Environmental Protection A	gency	F	ield Bo	oring Lo	g	Page 1 c	of1
	Site File No	o. <u>1430050001</u> County <u>Pec</u>	oria	Boring	No	N-04		Monitor Well No.	NA
		me Keystone Steel & Wire Co.							
	Fed. ID. No	b. <u>ILD000714881</u>		Auger	Depth	1,00	ft.	Rotary Depth	
	Quadrangle	e <u>Peoria West</u> Sec. <u>25</u> T. <u>8N</u>	R. <u>7E</u>	Date: 9	Start	9/19/01		Finish <u>9/19/01</u>	
	Site								
	Coord. N.(	x)21335.93	7.50		SVM	PLES	PERSONN	ÉI ]	
-	Latitude _	40 • 38 · 43 " Longitude 89 • 3	8 '33 "	į j	$\overline{}$	N I		G - JA Duwelius	
	Boring Loc	ation Sheen Pond	<del></del>	- <u>8</u>	TYPE RY (%	S	ဥတ္က		
	Drilling Equ	uipment Trowel	Graphic Log Depth in feet	SAMPLE NO. SAMPLE TYPE SAMPLE RECOVERY (%)	ETR SWC	PENETROMETER NVALUES (BLOW COUNTS) OVA or HNU READINGS	H - RE Aten H -		
1	Elev.	DESCRIPTION OF MATERIALS	Graphi Log Depth in feet	SAN	SAN	BEN PEN	REA	REMARK	S
	-	Silty clay loam, yellowish brown (10YR5/6), moist, friable, slightly calcareous, organic							_
	<u> </u>	most, mable, signly calcaledus, organic mottles.		1				Sample: N-04-S-01	
1	437.0								
	437.0	Total depth 1.0'.		1 1			İ		
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	Site File No	o1430050001	oria	Bor	ring No.		N	-05		Monitor Well No. NA
		me Keystone Steel & Wire Co.								
	Fed. ID. No	. <u>ILD000714881</u>		Aug	ger Dept	h _		1.00	ft.	Rotary Depth
1	Quadrangle	Peoria West Sec. 25 T. 8N	R. <u>7E</u>	Dat	te: Start		9/1	9/01		Finish9/19/01
١	Site									
	Coord. N.()				SAMPLES			<u>-</u> S		PERSONNEL
	Latitude	40 • 38 · 43 * Longitude 89 • 3	8 ' 33 "	:  -						G - JA Duwelius
	_	ation Sheen Pond		-  g	SAMPLE TYPE	SAMPLE RECOVERY (%)	PENETROMETER	SUN	OVA or HNU READINGS	D - Trowel H - RE Aten
	Drilling Equ	ipment <u>Trowel</u>	Graphic Log Depth	SAMPLE NO.	J E	뷭影	ÆTR	ALUE	A or H	H-
	Elev.	DESCRIPTION OF MATERIALS		SAN S	SAN	S A	PĒ	N (B V	SE SE	REMARKS
		Sitty clay loam, yellowish brown (10YR5/6), moist, friable, slightly calcareous.								
١	<u>-</u>	moist, mane, engine, care		Ì						Sample: N-05-S-01
	440.4	~ · · · · · · · · · · · · · · · · · · ·	F== 1	ı						
	1	Total depth 1.0'.				.				
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	Site File N	o. <u>1430050001</u> County <u>F</u>	Peoria	Boring N	ło	T-01		Monitor Well No. NA
	Site File N	ame Keystone Steel & Wire Co.		Surface !	Elevatio	n <u>444.2</u>	24 ft.	Completion Depth NA
7	Fed. ID. No	o. <u>ILD000714881</u>		Auger De	epth _	1.00	ft.	Rotary Depth
	Quadrangi	e <u>Peoria West</u> Sec. <u>31</u> T. <u>8</u>	<u>N</u> R. <u>8E</u>	Date: Sta	art	9/19/01		Finish 9/19/01
	Site Coord. N.(	x) <u>15559.52</u> E.(Y) <u>1</u>	0044.31					
l		40 • 37 · 53 • Longitude 89 •				PLES		PERSONNEL
	_	ation Trail Tracks Landfill		1 1	<u> </u>	PENETROMETER N VALUES (BLOW COUNTS)	٦	G - JA Duwelius D - Trowel
	_	uipment Trowel	hic t	SAMPLE NO.	SAMPLE RECOVERY (%)	TRON UES V COI	(BLOW COUNTS) OVA or HNU READINGS	H - RE Aten
			Graphic Log Depth in feet	SAMPLE	SAMP SECO	YENE VAL BLOV	VA o	REMARKS
	Elev.	DESCRIPTION OF MATERIALS Silty clay loam, brown w/gray (10YR5/3) &	,   0   1   2	0 0	, 0, 1	u 20	10 -	REIVIARRO
1	F	(10YR5/1), moist, friable, non-calcareous, contains organic material.						
	-	Contains organic material.						Sample: T-01-S-01
	<b> 443.2</b>	Total depth 1.0'.	<del></del>		1		ļ	
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	Site File No	1430050001	County	Peo	ria		Boring	No.			)2		Monitor Well No.	NA
- 1		me Keystone Steel & \												
	Fed, ID. No	. <u>ILD000714881</u>					Auger	Depti	h	1.	00	ft.	Rotary Depth	
- 1		Peoria West												
	Site													
'	Coord. N.(X	15261.52							Δ Ν / Ι	PLE:	S	1	PERSONI	VEI
	_atitude	40 • 37 53 "	Longitude89	38	<u> </u>	<u>33 *</u>			-					<u> </u>
- 1	_	ation Trail Tracks Land			45		9	SAMPLE TYPE	SAMPLE RECOVERY (%)	PENETROMETER		OVA or HNU READINGS	D - Trowel H - RE Aten	
'	Drilling Equ	ipment <u>Trowel</u>	· · · · · · · · · · · · · · · · · · ·		Graphic Log	eet pe	SAMPLE NO.	PLE	PE SVE	ETR.	NO.	PION	H- REAten	
	Elev.	DESCRIPTION	OF MATERIA	ALS	Gra Log	Depth in feet	SAN	SAN	S E	PEN		8 8	REMARI	<s< td=""></s<>
	_	Silty clay loam, grayish moist, friable, blocky s		2),		_								
	-	non-calcareous, conta		erial.		_							Sample: T-02-S-01	:
	 442.7	T				_ _ 1			_					
		Total depth 1.0'.		i						1				
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Illinois Environmental Protection A	gency	Field Boring Log Page 1 of 1
Site File No1430050001	oria	Boring No. T-03 Monitor Well No. NA
Site File Name Keystone Steel & Wire Co.		Surface Elevation 444.36 ft. Completion Depth NA
Fed. ID. No. <u>ILD000714881</u>		Auger Depth 1.00 ft. Rotary Depth
Quadrangle <u>Peoria West</u> Sec. <u>36</u> T. <u>8N</u>	R. <u>7E</u>	Date: Start9/19/01 Finish9/19/01
Site Coord. N.(X)15115.10 E.(Y)984	0.85	
Latitude 40 37 53 Longitude 89 3		SAMPLES PERSONNEL
Boring Location Trail Tracks Landfill		ய இ ப்பி இ G - JA Duwelius
Drilling Equipment Trowel	h hic	SAMPLE TYP SAMPLE TYP
Elev.   DESCRIPTION OF MATERIALS	Graphic Log Depth	SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SEADING OVA OF H H H H H H H H H H H H H H H H H H
Sifty clay loam, brown (10YR4/3), moist,		TALL WALLOW
friable, non-calcareous, contains organic material.		Sample: T-03-S-01
443.4		
Total depth 1.0'.	'	
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	Site File N	o1430050001	Peo	ria		Boring	g No.			-04		Monitor Well No.	NA	
		ame Keystone Steel & Wire Co.												
7	Fed. ID. N	o. <u>ILD000714881</u>				Auger Depth 1.00 ft.						Rotary Depth		
١	Quadrangl	e <u>Peoria West</u> Sec. <u>36</u> T.	8N	_ R7	7E	Date: Start 9/19/01 Finish 9/19/01							1	
	Site Coord. N.(	x) <u>15017.59</u> E.(Y)	965	9.36										
	Latitude _	40 • 37 · 53 " Longitude 89 •	38	<u> </u>	33 *	<u> </u>		AM				PERSON	INEL	
١	Boring Loc	ation Trail Tracks Landfill				o	Ä.	% %	METE	STNU	<b>.</b>	G - JA Duwelius D - Trowel		
	Drilling Eq	uipment Trowel		Graphic Log	et =	SAMPLE NO.	SAMPLE TYPE	SAMPLE RECOVERY (%)	PENETROMETER	VCO	OVA or HNU READINGS	H - RE Aten H -		
	Elev.	DESCRIPTION OF MATERIAL	<u> </u>	G ag	Depth in feet	SAME	SAME	SAME	PENE	N VA (BLO)	OVA	REMAR	KS	
		Silty clay loam, dark brown (10YR3/3),	<u> </u>		 _							112111		
	E	moist, sticky, non-calcareous, contains organic material.			-							Sample: T-04-S-01	İ	
Ì	441.7				_ _ 1									
ļ	441.7	Total depth 1.0'.			1									
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Boring Location Trail Tracks Landfill  Drilling Equipment Trowel  Elev. DESCRIPTION OF MATERIALS  Silty clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common	
Site File Name Keystone Steel & Wire Co.  Fed. ID. No. ILD000714881 Auger Depth 1.00 ft. Rotary Quadrangle Peoria West Sec. 36 T. 8N R. 7E Date: Start 9/19/01 Finish  Site Coord. N.(X) 14987.88 E.(Y) 9521.82  Latitude 40 37 53 Longitude 89 38 33 SAMPLES F.  Boring Location Trail Tracks Landfill  Drilling Equipment Trowel  Elev. DESCRIPTION OF MATERIALS  Sity clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Surface Elevation 443.28 ft. Compted Auger Depth 1.00 ft. Rotary  Surface Elevation 443.28 ft. Compted Auger Depth 1.00 ft. Rotary  Surface Elevation 443.28 ft. Compted Auger Depth 1.00 ft. Rotary  Auger Depth 1.00 ft. Rotary  SAMPLES F.  SAMPLES F.  O O J J J J J J J J J J J J J J J J J	
Quadrangle Peoria West Sec. 36 T. 8N R. 7E Date: Start 9/19/01 Finish  Site Coord. N.(X) 14987.88 E.(Y) 9521.82  Latitude 40 37 53 Longitude 89 38 33 SAMPLES  Boring Location Trail Tracks Landfill  Drilling Equipment Trowel  Elev. DESCRIPTION OF MATERIALS  Sity clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Site Coord. N.(X) 14987.88 E.(Y) 9521.82  SAMPLES G. J. SAMPLES G. J. J. J. J. J. J. J. J. J. J. J. J. J.	
Quadrangle Peoria West Sec. 36 T. 8N R. 7E Date: Start 9/19/01 Finish  Site Coord. N.(X) 14987.88 E.(Y) 9521.82  Latitude 40 37 53 Longitude 89 38 33 SAMPLES  Boring Location Trail Tracks Landfill  Drilling Equipment Trowel  Elev. DESCRIPTION OF MATERIALS  Sity clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Site Coord. N.(X) 14987.88 E.(Y) 9521.82  SAMPLES G. J. SAMPLES G. J. J. J. J. J. J. J. J. J. J. J. J. J.	Depth
Site Coord. N.(X) 14987.88 E.(Y) 9521.82  Latitude 40 • 37 • 53 • Longitude 89 • 38 • 33 • SAMPLES F.  Boring Location Trail Tracks Landfill  Drilling Equipment Trowel  Elev. DESCRIPTION OF MATERIALS  Sity clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Site Coord. N.(X) 14987.88 E.(Y) 9521.82  SAMPLES F. O. J. J. J. J. J. J. J. J. J. J. J. J. J.	
Boring Location Trail Tracks Landfill  Drilling Equipment Trowel  Elev. DESCRIPTION OF MATERIALS  Silty clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Simple T-05-S.	
Boring Location Trail Tracks Landfill  Drilling Equipment Trowel  Elev. DESCRIPTION OF MATERIALS  Silty clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Sample T-05-S.	PERSONNEL
Silty clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Sample T-05-S-	Duwelius
Silty clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Sample T-05-S-	owel E Aten
Silty clay loam, dark brown (10YR4/3), moist, sticky, non-calcareous, common organic material.  Sample T-05-S-	LAten
moist, sticky, non-calcareous, common organic material.  Sample T-05-S.	REMARKS
organic material. Sample	
	: T-05-S-01, MS/MSD,
	02
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	<b>a</b>	Illinois Environmental Protection A	gency		Fiel	d B	orir	ıg L	.og	Page1 of1	_
ļ	Site File No	o1430050001	ria	Borir	ng No.		Т	-06		Monitor Well No. NA	_
1	Site File Na	me Keystone Steel & Wire Co.		Surfa	ace Ele	evatio	n _	451.	1 ft.	Completion Depth NA	_
7	Fed. ID. No	. <u>ILD000714881</u>		Auge	r Dep	th _		1.00	ft.	Rotary Depth	
	Quadrangle	Peoria West Sec. 36 T. 8N	_ R. <u>7E</u>	Date: Start 9/19/01 Finish 9/19/01						Finish <u>9/19/01</u>	_
Ì	Site	45404.44	4.04								
	Coord. N.O				s	AM				PERSONNEL	
	_	40 • 37 53 Longitude 89 • 3	<u> </u>		۳	8	ETER	N VALUES (BLOW COUNTS)		G - JA Duwelius	
	_	ripment Trowel	<u>.</u>	SAMPLE NO.	SAMPLE TYPE	SAMPLE RECOVERY (%)	PENETROMETER	JES COU	OVA or HNU READINGS	D - Trowel H - RE Aten	
	Uniling Equ		Graphic Log Depth in feet	4MPL	4MPL	AMPI.	ENET	VALL	VA or EADII	H-	4
	Elev.	DESCRIPTION OF MATERIALS  Loam, dark brown (10YR4/3), dry, friable,		क	Ŝ	S E	ā	zΘ	0 2	REMARKS	$\dashv$
l	<u> </u>	calcareous, abundant slag, organic material									
	E	(fill material) .								Sample: T-06-S-01	
	<b>450.1</b>	Total depth 1.0'.	1	-	<del>                                     </del>						
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Site File N	o. <u>1430050001</u> County <u>Pe</u>	oria		Borin	ıg No.			<u>L-1</u>		Mor	nitor Well No.	NA	
Site File N	ame Keystone Steel & Wire Co.	<u>-</u>		Surfa	ce El	evatio	و ۱	443.6	31 ft.	Cor	npletion Depth	10.45	
Fed. ID. No	o. <u>ILD000714881</u>			Auge	r Dep	th _		11.00	ft.	Rot	ary Depth		_
Quadrangi	e <u>Peoria West</u> Sec. <u>31</u> T. <u>8N</u>	_ R	8E	Date	Start		9/	7/01		Fini	sh <u>9/17/0</u>	)1	
Site													
Coord. N.(					S	AM	PLI	ĒS		Į	PERSON	INEL	
	40 • 37 · 53 * Longitude 89 • 3	<u>38</u> '	33 *			<b>%</b>				G-	JA Duwelius		
_	ation Trail Tracks Landfill	ا ن	Τ	§ S	SAMPLE TYPE	RY (	PENETROMETER	N VALUES (BLOW COUNTS)	⊋ 85 8 <del>1</del> 1	D- H-	Hand Auger RE Aten		1
Drilling Eq	uipment Hand Auger	Graphic Log	Depth in feet	SAMPLE NO.	MPLE	SAMPLE RECOVERY (	NE TH	N N	OVA or HNU READINGS	н-			
Elev.	DESCRIPTION OF MATERIALS	<u>6</u> 2	<u> </u>	δ	S,	S H	H	źΘ	8 %		REMAR	RKS	4
E	Sity clay loam, dark grayish brown (10YR4/2), moist, slightly plastic,		-										
L	non-calcareous contains organic material, wet at 1.0'.		-										1
442.6			_ 1	}		ļ		ļ	ļ				
F			-						i i				
-			F.										
—441.6 —			<u> </u>										
F			-										
- - 440.6	(40)/50(4)	<u> </u>	<del> </del> 3	ļ		ļ		· · · · · · · ·		ļ			
) L	Silty clay loam, gray (10YR6/1), wet, plastic, non-calcareous, clear contact at 6.0' to,		<u>-</u>										
<u></u>	·		-					3			-		
439.6			_ 4	ļ									
F			_										
F			_ _ 5										
438.6			F										
-			F										-
437.6	Sand, fine, grayish brown (10YR5/2), color		6					ļ					
-	change at 7.0' to brown (10YR4/3), wet,	74	<u> -</u>							Ì			
þ	loose, non-plastic, non-calcareous, clear contact at 9.0' to,		-  -							ļ			
436.6		1000 p. 10 1000 p. 10 1000 p. 10	— 7 —							1			
			-										
- -435.6			- - 8	ļ					,				
- 433.0													
F			_										
434.6	Silty clay, gray (10YR6/1), moist, plastic,		9	ļ	ļ								
F	non-calcareous.								j				
			<del> -</del>										
<b>433.6</b>			— 10 –	·				ļ		-			
E													
F	Total depth 11.0'.		_										
(950226)	·			_									

(		Illinois Environmental Protection A	genc	y	l	Fiel	d B	orir	ng L	.og	Page 1 of	1
Site	File No	1430050001 County Pe	eoria		Borin	g No.		Ţ	L-2		Monitor Well No. NA	
Site	File Na	me Keystone Steel & Wire Co.			Surfa	ce Ele	evation	n <u>4</u>	442.7	1 ft.	Completion Depth10.64	4
Fed	1. ID. No.	ILD000714881			Auge	r Dep	th	1	1.00	ft.	Rotary Depth	
Qua	adrangle	Peoria West Sec. 31 T. 8N	R	8E	Date:	Start		9/1	7/01		Finish 9/17/01	
Site												
	ord. N.(X	) <u>15133.74</u> E.(Y) <u>99</u>	09.75				A B #		-		DEDSONNEL	
Lati	itude	40 • 37 53 • Longitude 89 •	<u>38 ·</u>	33 "			AM ~				PERSONNEL G - JA Duwelius	
Bori	ing Loca	tion Trail Tracks Landfill			Ş.	Y.	(%) ≿	PENETROMETER	N VALUES (BLOW COUNTS)	ე "	D - Hand Auger	
Drill	ling Equi	ipment <u>Hand Auger</u>	Graphic Log	 e	SAMPLE NO.	SAMPLE TYPE	SAMPLE RECOVERY (	ETRC	LUES W CC	OVA or HNU READINGS	H - RE Aten H -	
	Elev.	DESCRIPTION OF MATERIALS	Gag	Depth in feet	SAMI	SAMI	SAM	PENE	N VA (BLO	OVA REAL	REMARKS	
		Arc dust (?), reddish brown (5YR4/4), moist, friable, calcareous, trace slag, wet at 1.2',									T(E)	
1		clear contact at 2.2' to,		E								
1 -	441.7			- 1	····			•••••	ļ			
15				F								
1				-					} i			
	440.7			<u> </u> 2	ļ						,	
-		Clay, greenish gray (5GY5/1), moist, plastic, non-calcareous, clear contact at 2.7' to,		1								
15		Organic material, black (10YR2/1), wet,		*-								
	439.7	non-calcareous, (original ground surface) clear contact at 3.0' to,	/ ===	<del> </del> 3	1					•••••		
	İ	Silty clay, gray (10YR5/1), moist, plastic (stiff), non-calcareous, yellowish brown		-								
1 /	438.7	(10YR5/6) mottles common, distinct, coarse.		- 4	ļ	ļ						
	100.1	coarse.		<u>}</u>								
F	l			<u> </u>	}	İ			,			
	437.7			<u>‡</u> 5	ļ	ļ			ļ			
				1								
1				1								
	436.7			<u></u> 6	····				·····			
1 -				-								
		•		1								
	435.7			<del> </del> 7	ļ							
1 =				<u>+</u>								
1 -	1243			<u> </u> 8								
F	434.7			∓ °								
1				<u> </u>								
1E	433.7			- - 9					ļ			
- "				1								
F	Ì			<u> </u>								
	432.7			10	<b></b>				ļ			
				1								
1				1								
	0226)	Total depth 11.0'.	<u> </u>	Γ	1	L	لــــا		<u> </u>			

	Illinois Environmental Protection A	genc	y	ı	Fiel	d B	orir	ng L	.og	Page <u>1</u> of <u>1</u>
Site File No	. 1430050001 County Pec	oria		Borin	g No.			L-3		Monitor Well No. NA
	me Keystone Steel & Wire Co.			Surfa	ce Ele	evation	1 <u>4</u>	144.C	1 ft.	Completion Depth10.39
Fed. ID. No.	<u>ILD000714881</u>			Auger Depth 10.50 ft.					ft.	Rotary Depth
Quadrangle	Peoria West Sec. 36 T. 8N	_ R	7E	Date:	Start		9/1	7/01		Finish 9/17/01
Site										
Coord. N.(X		7.00			S	AM	Pi F	<u>-</u> -		PERSONNEL
Latitude		·8 <u>'</u>	33 *			8				G - JA Duwelius
	ation Trail Tracks Landfill			Ş.	TYPE	RY (°	PENETROMETER	N VALUES (BLOW COUNTS)	or HNU DINGS	D - Hand Auger H - RE Aten
Drilling Equ	ipment Hand Auger	Graphic Log	Depth in feet	SAMPLE NO.	SAMPLE	SAMPLE RECOVERY	NETR	ALUE	OVA or HNU READINGS	Н-
Elev.	DESCRIPTION OF MATERIALS	ठेड	2. ⊆	SA SA	S.	S H	H H	2 8	용품	REMARKS
-	Silty clay loam, very dark brown (10YR2/2), color change at 1.5' to brown (10YR5/3),									
F	slightly moist, friable, contains organic material, non-calcareous, clear contact at		_							
443.0	2.5' to,		<u> </u>							
			-							
			-		l. E					
442.0		<u> </u>	_ 2			·····				
\	Sith clay from grov 2 vollowish brown									
[ F ]	Sifty clay loam, gray & yellowish brown (10YR5/1) & (10YR5/4), moist, sticky, wet at		<u> </u>							
441.0	3.0', non-calcareous, clear contact at 6.0' to,							]		
<u> </u>									·	
440.0			- 4			ļ	- <b></b> -	ļ		
		E	_	}						
			_							
439.0			<u> </u>			}	••••	}		
1 F		E	E		}			ļ		
		<u> </u>	- 6							·
438.0 	Loamy sand, fine-medium, gray (10YR5/1), wet, loose, non-plastic, non-calcareous,	===								
	clear contact at 7.0' to,		F							
— 437.0	Sand, medium, gray (10YR5/1), wet, loose,	===	7			ļ		}		
	non-plastic, non-calcareous, clear contact at		F							
	9.5' to,									
— 436.0 —			— 8 ⊢	}		ļ <u> </u>		 		
			_	Ì						
F			  -  - 9							
—435.0 —			_ a							
	Silty clay, gray (10YR5/1), moist, plastic,	<u> </u>	F							
- - - 434.0	non-calcareous.	E	- - 10	ļ	ļ	<b> </b>	· · · · · ·	ļ		
			-  -							·
	Total depth 10.5									
(950226)		1	L	<u></u>	L.,	L				

Site File Name <u>Keystone</u> Fed. ID. No. <u>ILD0007148</u>	50001 County	Peor	ia											
Site File Name <u>Keystone</u> Fed. ID. No. <u>ILD0007148</u>	<del></del>				Boring	g No.		T	<u>L-4</u>		Monitor W	/ell No	NA.	
	881				Auger	r Depi	th		9.00	ft.	Rotary De	epth		
Quadrangle Peona vves	t Sec. <u>36</u> T.	_8N_	R7	'E	Date:	Start		9/1	7/01		Finish	9/17/0	1	
Site	15021.00 E.(Y)	0406	: 00											
<del>-</del>	53 " Longitude89 "			33 "		S	ΑM					RSON	NEL	
Boring Location Trail Tra				<u> </u>		] <sub>c</sub>	8	PENETROMETER	NTS)	OVA or HNU READINGS	G - JA Di			
			္ပ		SAMPLE NO.	SAMPLE TYPE	SAMPLE RECOVERY (%)	ROM	SE SO	HNU KGS	D- Hand H- REA	-		
Drilling Equipment Hand			Graphic Log	Depth in feet	4MPL	4MPL	AMPI O	ENET	VALL	VA or EADII	H			
	PTION OF MATERIA m, brown (10YR4/3), moist,	10	<u>ت</u> و 	⊇.⊆	Ŝ	Ŝ	જે જે		z 🖱	0 2	R	EMAR	KS	
slightly plastic	c, non-calcareous, contains	s [	===	_										
trace slag at 5.0' to,	1.5', wet at 1.5', clear conta	actat		<del>-</del>										
442.5		ţ	===	<del></del> 1										
F   ·		-	===	_										
		ļ	==3	<u>-</u>										
—441.5 —		ļ	_ <u>-</u>	— 2 –						) 				
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440.5		Ē	===	– — з										
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439.5		F		_ 4	<b></b>		<b> </b>							
<u> </u>		Ė	==3	<b>-</b> -										
<u> </u>		ŀ		_										
438.5 Silty clay, dar	rk gray (10YR4/1), wet, plas	stic,		— 5 –										
non-calcareo	ous, contains plant material.			_										
F				-										
—437.5 —				— 6 										
<u> </u>		ļ		<del>-</del>										
436.5		ļ.		– – 7			 							
- 30.5		[		- <i>'</i>										
F				_										
— — 435.5		-		- - 8	}									
-				<u>-</u>										
F   .		<u> </u>		<del>-</del>										
434.5 Total depth 9	9.0'.	F		— 9					_					
							[							
		1	_											

# Appendix C Well Completion Reports

Illinois Environmental Protection Agency	Well Completion Report
SITE #:	oria WELL#:TL-1
SITE NAME: Keystone Steel & Wire Co.	
SITE GRID COORDINATE: X 15493.81 Y 10028.76 (or) LATITUDE	
SURVEYED BY: Daily & Assoc.	ILL. REGISTRATION#: NA
DRILLING CONTRACTOR: NA	DRILLER: Hand Auger
CONSULTING FIRM:Earth Tech	GEOLOGIST: JA Duwelius
DRILLING METHOD: Hand Auger	DRILLING FLUIDS (TYPE): None
LOGGED BY: _ JA Duwelius	DATE STARTED: 9/17/01 DATE FINISHED: 9/18/01
REPORT FORM COMPLETED BY:	DATE:9/18/01
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft) (MSL)* (BGS)
TYPE OF SURFACE SEAL: Concrete	443.61 0.00 GROUND SURFACE
TYPE OF ANNULAR SEALANT: Granular Bentonite	440.81 2.80 TOP OF ANNULAR SEALANT
INSTALLATION METHOD: Pour	14
SETTING TIME:	7 442.61 1.00 STATIC WATER LEVEL (AFTER COMPLETION)
TYPE OF BENTONITE SEAL - GRANULAR PELLET SLURRY	
(CIRCLE ONE)  INSTALLATION METHOD: Pour	440.81 2.80 TOP OF SEAL
SETTING TIME:	439.91 3.70 TOP OF SANDPACK
TYPE OF SAND PACK: Silica Sand	
GRAIN SIZE: (SIEVE SIZE)	438.21 5.40 TOP OF SCREEN
INSTALLATION METHOD: Pour	
TYPE OF BACKFILL MATERIAL: NA	433.64 9.97 BOTTOM OF SCREEN 433.16 10.45 BOTTOM OF WELL
(IF APPLICABLE)  INSTALLATION METHOD: NA	432.61 11.00 BOTTOM OF BOREHOLE
	<ul> <li>REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM</li> </ul>
WELL CONSTRUCTION	CASING MEASUREMENTS
MATERIALS (CIRCLE ONE)	DIAMETER OF BOREHOLE (in) 6.0
	1D OF RISER PIPE (in) 2.0
	PROTECTIVE CASING LENGTH (ft) 5.0
PROTECTIVE CASING SS304 SS316 PTFE PVC OTHER: (	RISER PIPE LENGTH (ft) 7.46
RISER PIPE ABOVE W.T. SS304 SS316 PIFE PVC OTHER.	BOTTOWOF SCILENTO END CAL (III) 0.40.
RISER PIPE BELOW W.T. SS304 SS316 PTFE PVC OTHER. (	SCREEN LENGTH (ISTSLOTTO CAST SCOT) (II) 4.57
SCREEN SS304 SS316 PTFE PVC OTHER (	TOTAL LENGTH OF CASING (II) 12.51
(941014)	"HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

Illinois Environmental Protection Agency	Well Completion Report
SITE #: 1430050001 COUNTY: Pe	oria WELL #:TL-2
SITE NAME: Keystone Steel & Wire Co.	BOREHOLE #: TL-2
SITE GRID COORDINATE: X 15133.74 Y 9909.75 (or) LATITUDE	
SURVEYED BY: Daily & Assoc.	ILL. REGISTRATION #: NA
DRILLING CONTRACTOR: NA	DRILLER: Hand Auger
CONSULTING FIRM: Earth Tech	GEOLOGIST: JA Duwelius
DRILLING METHOD: Hand Auger	DRILLING FLUIDS (TYPE): None
LOGGED BY: JA Duwelius	DATE STARTED: 9/17/01 DATE FINISHED: 9/18/01
REPORT FORM COMPLETED BY: JA Duwelius	DATE: 9/18/01
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft) (MSL)* (BGS)
	446.473.76 TOP OF PROTECTIVE CASING
TYPE OF SURFACE SEAL: Concrete	442.71 0.00 GROUND SURFACE
TYPE OF ANNULAR SEALANT: Granular Bentonite	441.21 1.50 TOP OF ANNULAR SEALANT
INSTALLATION METHOD: Pour	
SETTING TIME:	441.51 1.20 STATIC WATER LEVEL (AFTER COMPLETION)
TYPE OF BENTONITE SEAL - GRANULAR PELLET SLURRY	
(CIRCLE ONE) INSTALLATION METHOD: Pour	441.21 1.50 TOP OF SEAL
SETTING TIME:	
TYPE OF SAND PACK: Silica Sand	
GRAIN SIZE: (SIEVE SIZE)	437.10 5.61 TOP OF SCREEN
INSTALLATION METHOD: Pour	
TYPE OF BACKFILL MATERIAL: NA	432.54 10.17 BOTTOM OF SCREEN 432.07 10.64 BOTTOM OF WELL
INSTALLATION METHOD: NA	431.71 11.00 BOTTOM OF BOREHOLE • REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
WELL CONSTRUCTION	CASING MEASUREMENTS
MATERIALS (CIRCLE ONE)	DIAMETER OF BOREHOLE (in) 6.0
(ONOCE ONE)	ID OF RISER PIPE (in) 2.0
	PROTECTIVE CASING LENGTH (ft) 5.0
PROTECTIVE CASING SS304 SS316 PTFE PVC OTHER: (	RISER PIPE LENGTH (ft) 9.04
RISER PIPE ABOVE W.T.: SS304 SS316 PTFE PVC OTHER: (	BOTTOW OF SCREEN TO END CAP (II) 0.47
RISER PIPE BELOW W.T. SS304 SS316 PTFE PVC OTHER: (	
SCREEN SS304 SS316 PTFE PVC OTHER: (	
(941014)	**HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

Illinois Environmental Protection Agency	Well Completion Report
SITE #: 1430050001 COUNTY: Pe	eoria WELL#: TL-3
SITE NAME: Keystone Steel & Wire Co.	
SITE GRID COORDINATE: X 14991.00 Y 9557.00 (or) LATITUDE	
SURVEYED BY: Daily & Assoc.	
DRILLING CONTRACTOR: NA	
CONSULTING FIRM: _Earth Tech	GEOLOGIST: <u>JA Duwelius</u>
DRILLING METHOD: Hand Auger	DRILLING FLUIDS (TYPE): None
LOGGED BY:	DATE STARTED: 9/17/01 DATE FINISHED: 9/18/01
REPORT FORM COMPLETED BY:	DATE: 9/18/01
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft) (MSL)* (BGS)
	446.95 -2.94 TOP OF PROTECTIVE CASING
TYPE OF SURFACE SEAL: Concrete	444.01 0.00 GROUND SURFACE
	441.81 2.20 TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Granular Bentonite	
INSTALLATION METHOD: Pour	
SETTING TIME:	7 441.01 3.00 STATIC WATER LEVEL (AFTER COMPLETION)
TYPE OF BENTONITE SEAL - (GRANULAR) PELLET SLURRY	
(CIRCLE ONE)	1
INSTALLATION METHOD: Pour	441.81 2.20 TOP OF SEAL
SETTING TIME:	440.81 3.20 TOP OF SANDPACK
TYPE OF SAND PACK: Silica Sand	
GRAIN SIZE: (SIEVE SIZE)	438.67 5.34 TOP OF SCREEN
INSTALLATION METHOD: Pour	
interneed includes:	434.11 9.90 BOTTOM OF SCREEN
TY.PE OF BACKFILL MATERIAL: NA (IF APPLICABLE)	
INSTALLATION METHOD: NA	433.51 10.50 BOTTOM OF BOREHOLE • REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
WELL CONSTRUCTION MATERIALS	CASING MEASUREMENTS
(CIRCLE ONE)	DIAMETER OF BOREHOLE (in) 6.0  ID OF RISER PIPE (in) 2.0
	PROTECTIVE CASING LENGTH (ft) 5.0
	RISER PIPE LENGTH (ft) 7.93
PROTECTIVE CASING SS304 SS316 PTFE PVC OTHER: (	BOTTONIOF SCREEN TO END CAF (III) 0.49
THE THE THE THE THE THE THE THE THE THE	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ff) 4.56
RISER PIPE BELOW W.T. SS304 SS318 PTFE PVC OTHER: ( SCREEN SS304 SS316 PTFE PVC OTHER: (	TOTAL LENGTH OF CASING (#) 12.98
(941014)	SCREEN SLOT SIZE ** (in) 0.010  "HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

Illinois Environ	mental Prote	ction A	gency			Wel	l Complet	ion Repor
SITE #: 1430050001		cou	NTY: <u>Peo</u>	ria		V	WELL #:	TL-4
SITE NAME: Keystone Steel &	Wire Co.				·	E	BOREHOLE #: _	TL-4
SITE GRID COORDINATE: X 1502	1.00 Y 9406.	<u>00</u> (or)	LATITUDE	40 •	37 53	LONGITUI	DE <u>89</u> .	38 33
SURVEYED BY: Daily & Assoc				ILL. REGI	STRATION#:	NA		
DRILLING CONTRACTOR: NA				DRILLER	: Hand Auger			
CONSULTING FIRM: Earth Tec	<u>h</u>			GEOLOG	IST: <u>JA Duwe</u>	lius		
DRILLING METHOD: Hand Au	ıger			DRILLING	FLUIDS (TYPE):	None		
LOGGED BY: JA Duwelius				DATE ST	ARTED: 9/17	7/01DA	TE FINISHED:	9/18/01
REPORT FORM COMPLETED BY: _	JA Duwelius			DATE:	9/18/01	<del></del>		
ANNULAR SPAC	E DETAILS				ELEVATIONS (MSL)*		(.01 ft	)
			<u> </u>	=	447.52	-3.99	TOP OF PRO	TECTIVE CASING
				7	447.19	-3.66	TOP OF RISE	R PIPE
TYPE OF SURFACE SEAL: Cond	erete				443.53	0.00	GROUND SUI	RFACE
	>	_			•			JLAR SEALANT
TYPE OF ANNULAR SEALANT:			7					
INSTALLATION METHOD: P					442 03	1.50	STATIC WATE	ER LEVEL
<u></u>							(AFTER COMP	
TYPE OF BENTONITE SEAL - GRAI	VULAR PELLET	SLURRY		行				
INSTALLATION METHOD: P		<u>.</u>			442.13	1.40	TOP OF SEAL	
SETTING TIME:	<del></del>				440.13	3.40	TOP OF SAND	PACK
TYPE OF SAND PACK: Silica Sa	and							
GRAIN SIZE: (SIEV					439.87	3.66	TOP OF SCRE	EN
INSTALLATION METHOD: PO	our							
TYPE OF BACKFILL MATERIAL:	NΔ			1		<u>8.23</u> 8.71	BOTTOM OF V	
TPE OF BACKFILL WATERIAL.	(IF APPLICABLE)			١	434.62	0.71	BOTTOW OF V	VELL
INSTALLATION METHOD: N	Α				434.53 • REFERENCED		BOTTOM OF E	
MELL C	CONSTRUCTION	ı			CAS	SINIC MEAS	SUREMENTS	
M	IATERIALS CIRCLE ONE)				IAMETER OF			(in) 6.0
,	CIRCLE ONE)				OF RISER PI			(in) 2.0
					ROTECTIVE C			(ft) 5.0
				R	ISER PIPE LEI	NGTH		(ft) 7.32
PROTECTIVE CASING	SS304 SS316 PTF	E PVC	OTHER: (S		OTTOM OF SC			(ft) 0.48
RISER PIPE ABOVE W.T.	SS304 SS316 PTF	E PVC	OTHER: P		CREEN LENG			(ft) 4.57
RISER PIPE BELOW W.T.	SS304 SS316 PTF	E PVC	OTHER: P		OTAL LENGTH			(ft) 12.37

ı

# Appendix D Oil Skimmer Basin Groundwater Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092683

November 7, 2001

Earth Tech

Project: Oil Skim Basin/ Waters

SDG #01092683

TABLE OF CONTENTS

# TABLE OF CONTENTS SDG #01092683

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**CASE NARRATIVE** 



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

# CASE NARRATIVE - Earth Tech/Keystone

#### Oil Skim Basin-Waters Project No. 19718.09

PDC Laboratories, Inc. received 8 water samples on September 19, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092683, for Total Metals, Hexane Ext. Material (HEM) by SPE, TPH, and Phenolics analysis.

Sample	Id's	Date				
Field	Lab	Collected	Received			
BCL-1-G-01 (M,X)	01092683-1	09/19/01	09/19/01			
BCL-2-G-01 (M,X)	01092683-2	09/19/01	09/19/01			
BCL-3-G-01 (M,X)	01092683-3	09/19/01	09/19/01			
BCL-4-G-01 (M,X)	01092683-4	09/19/01	09/19/01			
BCL-5-G-01 (M,X)	01092683-5	09/19/01	09/19/01			
BCL-5-G-02 (M,X)	01092683-6	09/19/01	09/19/01			
BT-15-G-01 (M,X)	01092683-7	09/19/01	09/19/01			
BFB2-G-01 (M,X)	01092683-8	09/19/01	09/19/01			

# **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by Method 200.8 and 200.7; Hexane Ext. Material (HEM) by SPE by Method 1664; TPH by Method 1664, and Phenolics by Method 420.2.

# Metals QC Summary (200.8)

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092683-5. All recoveries were within the specified QC limits except for Chromium, Manganese, Arsenic, and Mercury. A Post Digestion Spike was performed for these elements, and recoveries were within QC criteria.

recycled paper



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All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

All Interference Check Samples were within QC criteria.

## Metals QC Summary (200.7)

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092683-5. Recovery was within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

All Interference Check Samples were within QC criteria.

## Hexane Ext. Material (HEM) by SPE QC Summary

This test is sometimes referred to as Oil and Grease.

All holding time criteria were met for all samples.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092683-5. Recovery was within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

TPH analysis was also requested on these samples. Total Petroleum Hydrocarbons are a subset of the organic material identified by HEM. TPH analysis uses the extract generated during HEM to further characterize this organic material as specifically total petroleum hydrocarbons. When no organic material is detected in HEM analysis, we are unable to perform a TPH analysis because there is no extract to analyze. As no Hexane Extractable Material was detected in any of the samples in this SDG, we were not able to perform a TPH analysis on them.

# Phenolics QC Summary

All holding time criteria were met for all samples.

EAR01092683.DOC





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All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092683-5. Recovery was within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

#### Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Barkara Beard	Name:	Barbara Beard
Date:	November 7,01	Title:	Project Manager

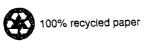
EAR01092683.poc



# PDC Laboratories, Inc. DATA QUALIFIERS

A	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
С	The batch control sample failed to meet the required acceptance criteria.
Ε	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
ĸ	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
S	Surrogate compound diluted below a reliable quantitation level.
Т	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery failed to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
NR	Not requested.
X	Miscellaneous; see comments.

PDC Laboratories, Inc.



TABULATED RESULTS



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<b>!</b>	Sit	ample No.: escription: te/Locator: e Collected:	01092683-1 205746 BCL-1-G-01 18-SEP-01 18:00:00	01092683-2 205746 BCL-2-G-01 18-SEP-01 18:15:00	01092683-3 11 <i>1</i> 20 <u>2</u> 42 <b>1</b> BCL-3-G-01 18-SEP-01 17:50:00
Method	Parameter		undiluted	undiluted	undiluted
EPA 200.7	Iron	mg/l	1.9	0.1	0.42
EPA 200.8	Aluminum	mg/l	0.52	0.1 J	0.068 J
EPA 200.8	Arsenic	mg/i	0.0068	0.0011	0.0024
EPA 200.8	Barium	mg/l	0.13 J	0.069 J	0.14 J
EPA 200.8	Cadmium	mg/l	0.005 U	0.005 U	0.005 U
EPA 200.8	Chromium	mg/l	0.004 J	0.0028 J	0.004 J
EPA 200.8	Copper	mg/l	0.0057 J	0.0018 J	0.002 J
EPA 200.8	Lead	mg/l	0.0018 J	0.00019 J	0.00081 J
_EPA 200.8	Manganese	mg/l	12	0.71	1.8
EPA 200.8 R5.4	Mercury	ug/l	0.2 U	0.2 U	0.2 U
-	Hexane Ext. Material (HEM) by SPE	mg/i	6 U	6 U	6 U
	Phenolics	mg/l	0.01	0.015	0.005 U

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Method	Sit	ample No.: escription: te/Locator: e Collected:	01092683-4 205746 BCL-4-G-01 18-SEP-01 17:40:00 undiluted	01092683-5 205746 BCL-5-G-01 18-SEP-01 17:30:00 undiluted	01092683-6 11 <u>/02/</u> Qa BCL-5-G-02 18-SEP-01 17:30:00 undiluted
		<del></del>			
EPA 200.7	Iron	mg/l	4.6	2.1	2.1
EPA 200.8	Aluminum	mg/l	0.04 J	0.016 J	0.015 J
EPA 200.8	Arsenic	mg/l	0.026	0.0082	0.0078
EPA 200.8	Barium	mg/l	0.24	0.097 J	0.11 J
EPA 200.8	Cadmium	mg/l	0.005 U	0.005 U	0.005 U
EPA 200.8	Chromium	mg/l	0.0035 J	0.0034 J	0.0042 J
EPA 200.8	Copper	mg/l	0.001 J	0.0014 J	0.0016 J
EPA 200.8	Lead	mg/l	0.00016 J	0.0011 J	0.0007 J
EPA 200.8	Manganese	mg/l	1.2	5.7	5.4
EPA 200.8 R5.4	Mercury	ug/l	0.2 U	0.2 U	0.2 U
<u> </u>	Hexane Ext. Material (HEM) by SPE	mg/l	6 U	6 U	6 U
	Phenolics	mg/l	0.0089	0.0039 J	0.0069

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Method	Sit	ample No.: escription: e/Locator: Collected:	01092683-7 205746 BT-15-G-01 18-SEP-01 18:40:00 undiluted	01092683-8 205746 BFB2-G-01 18-SEP-01 14:40:00 undiluted
EPA 200.7	Iron	mg/l	1.9	0.1 U
EPA 200.8	Aluminum	mg/l	0.35	0.0059 J
EPA 200.8	Arsenic	mg/l	0.0008 J	0.00018 J
EPA 200.8	Barium	mg/l	0.19 J	0.00027 J
EPA 200.8	Cadmium	mg/l	0.005 U	0.005 U
EPA 200.8	Chromium	mg/l	0.0026 J	0.00036 J
EPA 200.8	Copper	mg/l	0.0027 J	0.0003 J
EPA 200.8	Lead	mg/l	0.015	0.0002 J
EPA 200.8	Manganese	mg/l	0.54	0.00039 J
EPA 200.8 R5.4	Mercury	ug/l	0.2 U	0.2 U
	Hexane Ext. Material (HEM) by SPE	mg/l	6 U	6 U
	Phenolics	mg/l	0.005 U	0.005 U

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11/02/01

**DATES & DILUTIONS REPORT** 

		.33

Page 1

			,	•				, 4	gC 1
	Dil. Factor	Measure Dat	Hold Date	Batch ID	Assoc.Code		Analysis Dat		Analysis Batch
cab (D: 01.092683	A CAMP MILES SACRETED TO	Client ID	BCL-1:G-01	·······················C	ollect Date : 09	/18/01:18:0	0 ≯r⊹ Rec	eive Date: < 09/	19/01/18:20
ED GO HEXANE SPE						1	09/21/01 07	:00 10/16/01	18:00 WG49457
FED PHENOL						1	09/25/01 15	:47 10/16/01	18:00 WG49603
FED AL, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12		18:00 WG50240
FED AS, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 03/17/02	18:00 WG50240
FED BA, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 03/17/02	18:00 WG50240
FED CD, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 03/17/02	18:00 WG50240
ED CR, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 03/17/02	18:00 WG50240
FED CU, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 03/17/02	18:00 WG50240
ED FE, 200.7		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 09	:10 03/17/02 ·	18:00 WG50201
ED HG, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 10/16/01 ·	18:00 WG50240
FED MN, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 03/17/02 ·	18:00 WG50240
ED PB, 200.8		09/24/01 12:00	03/17/02 18:00	WG50053	PREP FOR	1	09/27/01 12	:05 03/17/02 ·	18:00 WG50240
ab ID: 01092683-	2	Client ID	BCL-2-G-01	Co	llect Date: 09	/18/01 18:15	Rec	eive Date:⊸09/	19/01 18:20,
EED GO HEXANE SPE					V-18 11-1-2-11-11-1	1	09/21/01 07	:00 10/16/01 :	18:15 WG49457
ED PHENOL						1	09/25/01 15		18:15 WG49497
FED AL, 200.8		09/24/01 12:00	03/17/02 18:15	WG50053	PREP FOR	1	09/27/01 12		18:15 WG50240
■EED AS, 200.8		09/24/01 12:00	03/17/02 18:15		PREP FOR	1	09/27/01 12:		18:15 WG50240
ED BA, 200.8		09/24/01 12:00	03/17/02 18:15		PREP FOR	1	09/27/01 12:		18:15 WG50240
FED CD, 200.8		09/24/01 12:00	03/17/02 18:15		PREP FOR	1	09/27/01 12:		18:15 WG50240
EED.CR, 200.8		09/24/01 12:00	03/17/02 18:15		PREP FOR	1	09/27/01 12:		18:15 WG50240
200.8		09/24/01 12:00	03/17/02 18:15		PREP FOR	1	09/27/01 12:		18:15 WG50240
FED FE, 200.7		09/24/01 12:00	03/17/02 18:15	WG50053	PREP FOR	1	09/27/01 09:		8:15 WG50201
ED HG, 200.8		09/24/01 12:00	03/17/02 18:15		PREP FOR	1	09/27/01 12:		8:15 WG50240
ED MN, 200.8		09/24/01 12:00	03/17/02 18:15	WG50053	PREP FOR	1	09/27/01 12:		8:15 WG50240
FED PB, 200.8		09/24/01 12:00	03/17/02 18:15	WG50053	PREP FOR	1	09/27/01 12:		8:15 WG50240
Lab ID: 01092683-	3 9 7 46		BCL-3-G-01	o Co		18/01:17:50			19/01,18:20
ED GO HEXANE SPE						1	09/21/01 07:		7:50 WG49457
FED PHENOL						1	09/25/01 15:		7:50 WG49603
ED AL, 200.8		09/24/01 12:00	03/17/02 17:50	WG50053	PREP FOR	1	09/27/01 12:		7:50 WG50240
ED AS, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:		7:50 WG50240
FED BA, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:		7:50 WG50240
ED CD, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:		7:50 WG50240
ED CR, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:		7:50 WG50240
FED CU, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:		7:50 WG50240
ED FE, 200.7		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 09:		7:50 WG50201
ED HG, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:	15 10/16/01 1	7:50 WG50240
FED MN, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:	15 03/17/02 1	7:50 WG50240
ED PB, 200.8		09/24/01 12:00	03/17/02 17:50		PREP FOR	1	09/27/01 12:	15 03/17/02 1	7:50 WG50240

Lab ID: 01092683-4	Client IE	),BCL-4-G-01	\$(γ	ollect Date: , 09	718/01:17:	40 Receive	Date: 09/19/01 18:20
FED GO HEXANE SPE					1	09/21/01 07:00	10/16/01 17:40 WG49457
FED PHENOL					1	09/25/01 15:49	10/16/01 17:40 WG49603
FED AL, 200.8	09/24/01 12:00	03/17/02 17:40	WG50053	PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
FED AS, 200.8	09/24/01 12:00	03/17/02 17:40	WG50053	PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
_ FED BA, 200.8	09/24/01 12:00	03/17/02 17:40		PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
FED CD, 200.8	09/24/01 12:00	03/17/02 17:40		PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
FED CR, 200.8	09/24/01 12:00	03/17/02 17:40	WG50053	PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
_FED CU, 200.8	09/24/01 12:00	03/17/02 17:40		PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
FED FE, 200.7	09/24/01 12:00	03/17/02 17:40		PREP FOR	1	09/27/01 09:27	03/17/02 17:40 WG50201
FED HG, 200.8	09/24/01 12:00	03/17/02 17:40	WG50053	PREP FOR	1	09/27/01 12:21	10/16/01 17:40 WG50240
_FED MN, 200.8	09/24/01 12:00	03/17/02 17:40	WG50053	PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
/ FED PB, 200.8	09/24/01 12:00	03/17/02 17:40	WG50053	PREP FOR	1	09/27/01 12:21	03/17/02 17:40 WG50240
Lab ID: 401092683-5	Client ID			ollect Date: 09	/18/01/17:	30 Receive	Date:> 09/19/01 18:20
■FED GO HEXANE SPE					1	09/21/01 06:00	10/16/01 17:30 WG49457
FED PHENOL					1	09/25/01 15:50	10/16/01 17:30 WG49603
FED AL, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
■FED AS, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
ED BA, 200.8	09/24/01 12:00	03/17/02 17:30		PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
FED CD, 200.8	09/24/01 12:00	03/17/02 17:30		PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
FEP-SR, 200.8	09/24/01 12:00	03/17/02 17:30		PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
J, 200.8	09/24/01 12:00	03/17/02 17:30		PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
FED FE, 200.7	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 09:33	03/17/02 17:30 WG50201
FED HG, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:37	10/16/01 17:30 WG50240
ED MN, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
FED PB, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:37	03/17/02 17:30 WG50240
- <b>L</b> ab ID: ○○01092683-6	Client ID	BCL-5-G-02	· · · · · · · · · · · · · · · · · · ·	llect Date: 09/	/18/01.17:	Receive	Date: 09/19/01 18:20
ED GO HEXANE SPE					1	09/21/01 07:00	10/16/01 17:30 WG49457
FED PHENOL					1	09/25/01 15:53	10/16/01 17:30 WG49603
ED AL, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240
ED AS, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240
FED BA, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240
ED CD, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240
ÉD CR, 200.8	09/24/01 12:00	03/17/02 17:30		PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240
FED CU, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240
ED FE, 200.7	09/24/01 12:00	03/17/02 17:30		PREP FOR	1	09/27/01 10:03	03/17/02 17:30 WG50201
ED HG, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:26	10/16/01 17:30 WG50240
FED MN, 200.8	09/24/01 12:00	03/17/02 17:30		PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240
ED PB, 200.8	09/24/01 12:00	03/17/02 17:30	WG50053	PREP FOR	1	09/27/01 12:26	03/17/02 17:30 WG50240

ab ID	and a second Clientil D	BT-15-G-01-22-2	teradaen kroek Ca	llect Date 909	748704848	·40	Date = 09/49/01-18-20
							The test of the same of the second section of the section of t
FED GO HEXANE SPE					1	09/21/01 07:00	10/16/01 18:40 WG49457
FED PHENOL					1	09/25/01 15:58	10/16/01 18:40 WG49603
ED AL, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
TED AS, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
_ FED BA, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
ED CD, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
FED CR, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
_FED CU, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
ED FE, 200.7	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 10:09	03/17/02 18:40 WG50201
FED HG, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	10/16/01 18:40 WG50240
_FED MN, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
ED PB, 200.8	09/24/01 12:00	03/17/02 18:40	WG50053	PREP FOR	1	09/27/01 12:32	03/17/02 18:40 WG50240
Cab ID: 01092683-8	Client ID	BFB2-G-01	√. Co	llect Date: .09	/18/01 14	40 Receive	Date: 09/19/01/18:20
Secretaria de la capación de la constante de la constante de la capación de la capación de la capación de la c	Client ID	BEB2-G-01	Co	llect Date∷ 09.	/18/01/14 1	E 0.0 G 4.0 4. 1. 20 20 00 00 00 00 00 20 20 20 20 20 20	
ED GO HEXANE SPE	Client ID	BFB2-G-01	Co	llect Date: 09	* 11 / 41 / 3 / 44 / 41	09/21/01 07:00	10/16/01 14:40 WG49457
ED GO HEXANE SPE	and the Committee of th	<u>ing the supported part the articles</u>			1	09/21/01 07:00 09/25/01 15:59	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603
EED GO HEXANE SPE ED PHENOL FED AL, 200.8	09/24/01 12:00	03/17/02 14:40	WG50053	PREP FOR	1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240
EED GO HEXANE SPE ED PHENOL FED AL, 200.8 EED AS, 200.8	09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40	WG50053 WG50053	PREP FOR	1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603
EED GO HEXANE SPE LED PHENOL FED AL, 200.8 EED AS, 200.8 EED BA, 200.8	09/24/01 12:00 09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40 03/17/02 14:40	WG50053	PREP FOR PREP FOR PREP FOR	1 1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240
EED GO HEXANE SPE LED PHENOL FED AL, 200.8 EED AS, 200.8 LED BA, 200.8 FED CD, 200.8	09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40	WG50053 WG50053 WG50053 WG50053	PREP FOR PREP FOR PREP FOR	1 1 1 1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240
FED GO HEXANE SPE  JED PHENOL  FED AL, 200.8  JED AS, 200.8  JED BA, 200.8  FED CD, 200.8  JED CR, 200.8	09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40	WG50053 WG50053 WG50053 WG50053	PREP FOR PREP FOR PREP FOR PREP FOR	1 1 1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240
FED GO HEXANE SPE LED PHENOL FED AL, 200.8 FED AS, 200.8 FED CD, 200.8 FED CD, 200.8 FED CR, 200.8	09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40	WG50053 WG50053 WG50053 WG50053	PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR	1 1 1 1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240
FED GO HEXANE SPE JED PHENOL FED AL, 200.8 FED AS, 200.8 JED BA, 200.8 FED CD, 200.8 FED CR, 200.8 FED FE, 200.7	09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40	WG50053 WG50053 WG50053 WG50053 WG50053	PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR	1 1 1 1 1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240
FED GO HEXANE SPE IED PHENOL FED AL, 200.8 FED AS, 200.8 FED CD, 200.8 FED CD, 200.8 FED SR, 200.8 FED FE, 200.7 FED HG, 200.8	09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40	WG50053 WG50053 WG50053 WG50053 WG50053 WG50053	PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR	1 1 1 1 1 1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240
ED GO HEXANE SPE  ED PHENOL  FED AL, 200.8  ED BA, 200.8  FED CD, 200.8  FED CD, 200.8  FED CD, 200.8  FED FE, 200.7	09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00 09/24/01 12:00	03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40 03/17/02 14:40	WG50053 WG50053 WG50053 WG50053 WG50053 WG50053 WG50053	PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR PREP FOR	1 1 1 1 1 1 1 1	09/21/01 07:00 09/25/01 15:59 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 13:36 09/27/01 10:15	10/16/01 14:40 WG49457 10/16/01 14:40 WG49603 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240 03/17/02 14:40 WG50240

**QC SUMMARY** 

#### PDC Laboratories Quality Control Summary Report

ROJECT: 01092683

ALS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

C CROSS REFERENCE REPORT

<b> </b>	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
_	01092683-1	BCL-1-G-01	WG50053	WG50240	27-Sep-01 12:05	JTM '	EPA 200.8
l	01092683-2	BCL-2-G-01	WG50053	WG50240	27-Sep-01 12:10	JTM	EPA 200.8
į .	01092683-3	BCL+3-G-01	. WG50053	WG50240	27-Sep-01 12:15	JTM	EPA 200.8
•	01092683-4	BCL-4-G-01	WG50053	WG50240	27-Sep-01 12:21	JTM	EPA 200.8
	01092683-5	BCL-5-G-01	WG50053	WG50240	27-Sep-01 12:37	JTM	EPA 200.8
•	01092683-6	BCL-5-G-02	WG50053	WG50240	27-Sep-01 12:26	JTM	EPA 200.8
l	01092683-7	BT-15-G-01	WG50053	WG50240	27-Sep-01 12:32	JTM	EPA 200.8
	01092683-8	BFB2-G-01	WG50053	WG50240	27-Sep-01 13:36	JTM	EPA 200.8

#### METHOD BLANK

Laboratory ID: WG50053-1 Analysis Lot: WG50240 Sample Tag: WG50053

	Analyte	Units	Value	RDL	Analysis Date
	Aluminum	MG/L	0.0092J	0.20	27-Sep-01 13:31
	Chromium	MG/L	0.0100	0.010	27-Sep-01 13:31
	Manganese	MG/L	0.015U	0.015	27-Sep-01 13:31
	Copper	MG/L	0.025U	0.025	27-Sep-01 13:31
	Arsenic	MG/L	6.1e-05J	0.0010	27-Sep-01 13:31
ļ	Cadmium	MG/L	0.0050U	0.0050	27-Sep-01 13:31
	Barium	MG/L	0.20U	0.20	27-Sep-01 13:31
_	Lead	MG/L	0.0030U	0.0030	27-Sep-01 13:31
	Mercury	tic/t.	0.2011	0 20	27-Sen-01 13:31

#### LABORATORY CONTROL SAMPLE

oratory ID: WG50053-2 Analysis Lot: WG50240 Sample Tag:

Analyt	e Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aluminu	m MG/L	5.55	5.40	97.3	85.0-115	27-Sep-01 14:22
Chromium	m MG/L	5.55	5.80	104	85.0-115	27-Sep-01 14:22
Manganes	e MG/L	5.55	5.50	99.1	85.0-115	27-Sep-01 14:22
Coppe:	r MG/L	5.55	5.40	97.3	85.0-115	27-Sep-01 14:22
Arsenio	mG/L	5.55	5.80	104	85.0-115	27-Sep-01 14:22
Cadmiu	n MG/L	5.55	5.40	97.3	85.0-115	27-Sep-01 14:22
Bariu	n MG/L	5.55	5.30	95.5	85.0-115	27-Sep-01 14:22
Lead	MG/L	5.55	5.50	99.1	85.0-115	27-Sep-01 14:22
Mercury	/ UG/L	4.40	4.10	93.0	85.0-115	27-Sep-01 14:22

#### TRIX SPIKE/MATRIX SPIKE DUPLICATE

oratory IDs: WG50053-3, WG50053-4 Analysis Lot: WG50240 Sample Spiked: 01092683-5 Site: BCL-5-G-01 Sample Tag:

<b>=</b>	Analyte	Units		Amt MSD Spiked	-	MS Value	MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits	
	Aluminum	MG/L	5.5	5.5	0.016	5.8	6.8	104	122	70.0-130	15.9	20.0	
	Chromium	MG/L	5.5	5.5	0.0034	6.3	7.3	114	132	70.0-130	14.6	20.0	*
	Manganese	MG/L	5.5	5.5	5.7	12	13	216	234	70.0-130	8.00	20.0	*
	Copper	MG/L	5.5	5.5	0.0014	6.0	7.0	108	126	70.0-130	15.4	20.0	
_	Arsenic	MG/L	5.5	5.5	0.0082	6.5	7.6	117	137	70.0-130	15.7	20.0	*
	Cadmium	MG/L	5.5	5.5	0.0050U	5.9	6.9	106	124	70.0-130	15.6	20.0	
	Barium	MG/L	5.5	5.5	0.097	6.0	6.9	108	124	70.0-130	13.8	20.0	

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#### PDC Laboratories Quality Control Summary Report

ROJECT: 01092683

ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

ATRIX SPIKE/MATRIX SPIKE DUPLICATE

Laboratory IDs: WG50053-3, WG50053-4 Analysis Lot: Sample Spiked: 01092683-5 Site: BCL-5-G-01 Sample Tag:

Analyte	Units		-	MS Value		MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits	
Lead Mercury	MG/L UG/L		0.0011 0.20U		7.1 6.3	110 122		70.0-130 70.0-130		20.0	

#### INITIAL CALIBRATION VERIFICATION

boratory ID: WG50240-1 Analysis Lot: WG50240 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aluminum	MG/L	0.0250	0.025	100	90.0-110	27-Sep-01 09:52
Chromium	MG/L	0.0250	0.026	104	90.0-110	27-Sep-01 09:52
Manganese	MG/L	0.0250	0.026	104	90.0-110	27-Sep-01 09:52
Copper	MG/L	0.0250	0.027	108	90.0-110	27-Sep-01 09:52
Arsenic	MG/L	0.0250	0.025	100	90.0-110	27-Sep-01 09:52
Cadmium	MG/L	0.0250	0.026	104	90.0-110	27-Sep-01 09:52
Barium	MG/L	0.0250	0.026	104	90.0-110	27-Sep-01 09:52
Lead	MG/L	0.0250	0.027	108	90.0-110	27-Sep-01 09:52
Mercury	UG/L	1.50	1.6	107	90.0-110	27-Sep-01 09:52

#### IITIAL CALIBRATION BLANK

bo pry ID: WG50240-2	Analysis Lot: WG50240
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	Analyte	Units	Value	RDL	Analysis Date
	Aluminum	MG/L	0.200	0.20	27-Sep-01 10:01
	Chromium	MG/L	0.0100	0.010	27-Sep-01 10:01
	Manganese	MG/L	0.015U	0.015	27-Sep-01 10:01
	Copper	MG/L	0.0250	0.025	27-Sep-01 10:01
	Arsenic	MG/L	0.0010U	0.0010	27-Sep-01 10:01
_	Cadmium	MG/L	0.00500	0.0050	27-Sep-01 10:01
	Barium	MG/L	0.200	0.20	27-Sep-01 10:01
	Lead	MG/L	0.00300	0.0030	27-Sep-01 10:01
	Mercury	UG/L	0.200	0.20	27-Sep-01 10:01

#### NTINUING CALIBRATION BLANK

Laboratory ID: WG50240-10 Analysis Lot: WG50240

Analyte	e Units	Value	RDL	Analysis Date
Aluminum		0.200	0.20	27-Sep-01 14:40
Chromium	m MG/L	0.0100	0.010	27-Sep-01 14:40
Manganes	e MG/L	0.015U	0.015	27-Sep-01 14:40
Coppe:	r MG/L	0.0250	0.025	27-Sep-01 14:40
Arsenio	c MG/L	4.7e-05J	0.0010	27-Sep-01 14:40
Cadmiur	m MG/L	0.00500	0.0050	27-Sep-01 14:40
Bariu	m MG/L	0.20U	0.20	27-Sep-01 14:40
Lead	d MG/L	0.00300	0.0030	27-Sep-01 14:40
Mercur	y UG/L	0.200	0.20	27-Sep-01 14:40

Laboratory ID: WG50240-12 Analysis Lot: WG50240

	Analyte	Units	Value	RDL	Analysis Date
	Aluminum	MG/L	0.200	0.20	27-Sep-01 15:53
	Chromium	MG/L	0.0100	0.010	27-Sep-01 15:53
	Manganese	MG/L	0.015U	0.015	27-Sep-01 15:53
	Copper	MG/L	0.0250	0.025	27-Sep-01 15:53
	Arsenic	MG/L	0.00100	0.0010	27-Sep-01 15:53
-	Cadmium	MG/L	0.00500	0.0050	27-Sep-01 15:53
	Barium	MG/L	0.200	0.20	27-Sep-01 15:53

#### PDC Laboratories Quality Control Summary Report

ROJECT: 01092683

# ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

ONTINUING CALIBRATION BLANK

Laboratory ID: WG50240-12 Analysis Lot: WG50240 Sample Tag: WG50053

<b>.</b>	Analyte	Units	Value	RDL	Analysis Date
	Lead Mercurv	MG/L UG/L	0.0030U 0.20U	0.0030	27-Sep-01 15:53 27-Sep-01 15:53

boratory ID: WG50240-5 Analysis Lot: WG50240

Analyte	Units	Value	RDL	Analysis Date
Aluminum	MG/L	0.200	0.20	27-Sep-01 11:35
Chromium	MG/L	0.0100	0.010	27-Sep-01 11:35
Manganese	MG/L	0.0150	0.015	27-Sep-01 11:35
Copper	MG/L	0.0250	0.025	27-Sep-01 11:35
Arsenic	MG/L	3.4e-05J	0.0010	27-Sep-01 11:35
Cadmium	MG/L	0.00500	0.0050	27-Sep-01 11:35
Barium	MG/L	0.200	0.20	27-Sep-01 11:35
Lead	MG/L	0.0030U	0.0030	27-Sep-01 11:35
Mercury	UG/L	0.200	0.20	27-Sep-01 11:35

boratory ID: WG50240-7 Analysis Lot: WG50240

	Analyte	Units	Value	RDL	Analysis Date
· • • • • • • • • • • • • • • • • • • •	Aluminum	MG/L	0.200	0.20	27-Sep-01 13:06
	Chromium	MG/L	0.0100	0.010	27-Sep-01 13:06
	Manganese	MG/L	0.0150	0.015	27-Sep-01 13:06
	Copper	MG/L	0.025U	0.025	27-Sep-01 13:06
	Arsenic	MG/L	3.6e-05J	0.0010	27-Sep-01 13:06
_	Cadmium	MG/L	0.0050U	0.0050	27-Sep-01 13:06
<b>.</b>	Barium	MG/L	0.200	0.20	27-Sep-01 13:06
	Lead	· MG/L	0.00300	0.0030	27-Sep-01 13:06
	Mercury	UG/L	0.200	0.20	27-Sep-01 13:06

#### TERFERENCE CHECK SAMPLE - A

Laboratory ID: WG50240-3 Analysis Lot: WG50240

	Analyte	Units	Spiked	Measured	%Recovery	Limi	ts Da	te
	Aluminum	MG/L	50	50.42629175	101	80.0-120	27-Sep-01 10:16	;
	Chromium	MG/L	0.0	0.00065	N/A	N/A	27-Sep-01 10:16	
-	Manganese	MG/L	0.0	0.0017	N/A	N/A	27-Sep-01 10:16	
6	Copper	MG/L	0.0	0.00070	N/A	N/A	27-Sep-01 10:16	
	Arsenic	MG/L	0.0	2.2e-05	N/A	N/A	27-Sep-01 10:16	
<del></del>	Cadmium	MG/L	0.0	-6.4e-05	N/A	N/A	27-Sep-01 10:16	
	Barium	MG/L	0.0	0.0031	N/A	N/A	27-Sep-01 10:16	
	Lead	MG/L	0.0	0.00029	N/A	N/A	27-Sep-01 10:16	
	Mercury	UG/L	0.0	0.0017	N/A	N/A	27-Sep-01 10:16	

INTERFERENCE CHECK SAMPLE - AB

Coratory ID: WG50240-4 Analysis Lot: WG50240

<b>a</b> .	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Aluminum	MG/L	50	52.00765268	104	80.0-120	27-Sep-01 10:22
	Chromium	MG/L	0.050	0.054	108	30.0-120	27-Sep-01 10:22
	Manganese	MG/L	0.050	0.055	110	30.0-120	27-Sep-01 10:22
	Copper	MG/L	0.050	0.053	106	30.0-120	27-Sep-01 10:22
	Arsenic	MG/L	0.010	0.010	104	30.0-120	27-Sep-01 10:22
	Cadmium	MG/L	0.10	0.11	106	30.0-120	27-Sep-01 10:22
_	Barium	MG/L	0.050	0.058	117	30.0-120	27-Sep-01 10:22

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ROJECT: 01092683

SANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

NTERFERENCE CHECK SAMPLE - AB

Laboratory ID: WG50240-4 Analysis Lot: WG50240

Analyte		•		%Recovery		Analysis Date	
Lead	MG/L	0.0050	0.0059	118	80.0-120	27-Sep-01 10:22	
Mercury	ug/l	0.0	-0.0019	N/A	N/A	27-Sep-01 10:22	

#### ONTINUING CALIBRATION VERIFICATION

Laboratory I	D:	WG50240-13	Analysi	s Lot:	WG50240	Sample Tag:
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Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aluminum	MG/L	0.025	0.025	100	85.0-115	27-Sep-01 16:16
Chromium	MG/L	0.025	0.025	. 100	85.0-115	27-Sep-01 16:16
Manganese	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 16:16
Copper	MG/L	0.025	0.027	108	85.0-115	27-Sep-01 16:16
Arsenic	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 16:16
Cadmium	MG/L '	0.025	0.026	104	85.0-115	27-Sep-01 16:16
Barium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 16:16
Lead	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 16:16
Mercury	UG/L	1.5	1.6	107	85.0-115	27-Sep-01 16:16

Laboratory ID: WG50240-6 Analysis Lot: WG50240 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
 Aluminum	MG/L	0.025	0.025	100	85.0-115	27-Sep-01 11:50
Chromium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 11:50
Manganese	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 11:50
Copper	MG/L	0.025	0.028	112	85.0-115	27-Sep-01 11:50
Arsenic	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 11:50
Cadmium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 11:50
 Barium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 11:50
Lead	MG/L	0.025	0.027	108	85.0-115	27-Sep-01 11:50
Mercury	UG/L	1.5	1.6	107	85.0-115	27-Sep-01 11:50

Laboratory ID: WG50240-8 Analysis Lot: WG50240 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aluminum	MG/L	0.025	0.025	100	85.0-115	27-Sep-01 13:22
Chromium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 13:22
Manganese	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 13:22
Copper	MG/L	0.025	0.027	108	85.0-115	27-Sep-01 13:22
Arsenic	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 13:22
Cadmium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 13:22
Barium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 13:22
Lead	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 13:22
Mercury	UG/L	1.5	1.7	113	85.0-115	27-Sep-01 13:22

Laboratory ID: WG50240-9 Analysis Lot: WG50240 Sample Tag:

Analyte	Units	Spiked	Measured	%Recovery	Limits	Analysis Date
Aluminum	MG/L	0.025	0.025	100	85.0-115	27-Sep-01 14:31
Chromium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 14:31
Manganese	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 14:31
Copper	MG/L	0.025	0.027	108	85.0-115	27-Sep-01 14:31
Arsenic	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 14:31
Cadmium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 14:31
Barium	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 14:31

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ALS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

ONTINUING CALIBRATION VERIFICATION

Laboratory ID: WG50240-9 Analysis Lot: WG50240 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery		Analysis Date
Lead	MG/L	0.025	0.026	104	85.0-115	27-Sep-01 14:31
Mercury	UG/L	1.5	1.7	113	85.0-115	27-Sep-01 14:31

## OST DIGESTION SPIKE

Laboratory ID: WG50240-11 Analysis Lot: WG50240

Analyte	Units	Spiked	Measured	%Recovery	Limits	Analysis Date
Chromium	MG/L	0.560	0.59	106	85.0-115	27-Sep-01 15:36
Manganese	MG/L	0.560	6.2	90.1	85.0-115	27-Sep-01 15:36
Arsenic	MG/L	0.560	0.60	107	85.0-115	27-Sep-01 15:36
Cadmium	MG/L	0.560	0.57	103	85.0-115	27-Sep-01 15:36
Mercury	UG/L	5.55	5.3	95.0	70.0-130	27-Sep-01 15:36

ROJECT: 01092683

ANALYSIS (EPA 200.7) AND PREPARATION (SW3051)

CROSS REFERENCE REPORT

	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092683-1	BCL-1-G-01	WG50053	WG50201	27-Sep-01 09:10	DWK	EPA 200.7
1	01092683-2	BCL-2-G-01	WG50053	WG50201	27-Sep-01 09:15	DWK	EPA 200.7
	01092683-3	BCL-3-G-01	WG50053	WG50201	27-Sep-01 09:21	DWK	EPA 200.7
	01092683-4	BCL-4-G-01	WG50053	WG50201	27-Sep-01 09:27	DWK	EPA 200.7
	01092683-5	BCL-5-G-01	WG50053	WG50201	27-Sep-01 09:33	DWK	EPA 200.7
	01092683-6	BCL-5-G-02	WG50053	WG50201	27-Sep-01 10:03	DWK	EPA 200.7
1	01092683-7	BT-15-G-01	WG50053	WG50201	27-Sep-01 10:09	DWK	EPA 200.7
	01092683-8	BFB2-G-01	WG50053	WG50201	27-Sep-01 10:15	DWK	EPA 200.7

METHOD BLANK

boratory ID: WG50053-1 Analysis Lot: WG50201 Sample Tag: WG50053

Analyte Units Value RDL Analysis Date

Fron MG/L 0.011J 0.10 27-Sep-01 08:57

LABORATORY CONTROL SAMPLE

aporatory ID: WG50053-2 Analysis Lot: WG50201 Sample Tag:

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

0169268 - 5 BJB 11-05-01

Laboratory IDs: WG50053-3, WG50053-4 Analysis Lot: WG50201 Sample Spiked: met found Site: Sample Tag:

Amt MS Amt MSD Sample MS MSD MS MSD Rec RPD
Analyte Units Spiked Spiked Value Value Value Rec Rec Limits RPD Limits

Iron MG/L 5.5 5.5 0.0 7.6 7.5 99.0 97.0 70.0-130 1.32 20.0

ITIAL CALIBRATION VERIFICATION

Laboratory ID: WG50201-1 Analysis Lot: WG50201 Sample Tag:

Analyte Units Spiked Measured \*Recovery Limits Analysis Date

Iron MG/L 4.00 4.0 100 90.0-110 27-Sep-01 08:32

ITIAL CALIBRATION BLANK

Laboratory ID: WG50201-2 Analysis Lot: WG50201

Analyte Units Value RDL Analysis Date

| Iron MG/L 0.10U 0.10 27-Sep-01 08:39

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OJECT: 01092683

ANALYSIS (EPA 200.7) AND PREPARATION (SW3051)

## CONTINUING CALIBRATION BLANK

boratory	ID:	WG50201-6	Analysis	Lot:	WG50201

_	Analyte	Units	Value	RDL	Analysis Date
₽					
	Iron	MG/L	0.100	0.10	27-Sep-01 09:50

Laboratory ID: WG50201-8 Analysis Lot: WG50201

Analyte Units Value RDL Analysis Date

Iron MG/L 0.0038J 0.10 27-Sep-01 11:07

## TERFERENCE CHECK SAMPLE - A

Laboratory ID: WG50201-3 Analysis Lot: WG50201

Analyte		-		*Recovery		Date
 Iron	MG/L	200	201.92		80.0-120	27-Sep-01 08:45

## TERFERENCE CHECK SAMPLE - AB

Laboratory ID: WG50201-4 Analysis Lot: WG50201

	Analyte		-		*Recovery		Analysis Date
,	Iron	MG/L	200	216.13		80.0-120	27-Sep-01 08:51

## NTINUING CALIBRATION VERIFICATION

Laboratory ID: WG50201-5 Analysis Lot: WG50201 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Iron	MG/L	4.0	4.0	100	90.0-110	27-Sep-01 09:45

oratory ID: WG50201-7 Analysis Lot: WG50201 Sample Tag:

-	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
_	Iron	MG/L	4.0	4.0	100	90.0-110	27-Sep-01 11:02

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OJECT: 01092683

MEMISTRY ANALYSIS AND PREPARATION

CROSS REFERENCE REPORT

	Lab ID	Client ID	Prep. Lot Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092683-1	BCL-1-G-01	WG49457	21-Sep-01 07:00	ECH	EPA 1664
1	01092683-2	BCL-2-G-01	WG49457	21-Sep-01 07:00	ECH	EPA 1664
	01092683-3	BCL-3-G-01	WG49457	21-Sep-01 07:00	ECH	EPA 1664
j	01092683-4	BCL-4-G-01	WG49457	21-Sep-01 07:00	ECH	EPA 1664
	01092683-5	BCL-5-G-01	WG49457	21-Sep-01 06:00	ECH	EPA 1664
_	01092683-6	BCL-5-G-02	WG49457	21-Sep-01 07:00	ECH	EPA 1664
Į.	01092683-7	BT-15-G-01	WG49457	21-Sep-01 07:00	ECH	EPA 1664
•	01092683-8	BFB2-G-01	WG49457	21-Sep-01 07:00	ECH	EPA 1664

#### METHOD BLANK

Laboratory ID: WG49457-1 Analysis Lot: WG49457 Sample Tag: N/A

	Analyte	Units	Value	RDL	Analysis Date
ane Ext. Material		MG/L	5.00	5.0	

#### LABORATORY CONTROL SAMPLE

Laboratory ID: WG49457-2 Analysis Lot: WG49457 Sample Tag:

4			Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
-	<b></b>								
.1	e Ext.	Material	(HEM) by	MG/L	40.0	41.0	102	78.0-114	21-Sep-01 06:00

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

				Amt MSD	-			MS	MSD	Rec		RPD
	Analyte		-	-								Limits
Mexane Ext. Material	(HEM) by	MG/L	40	40	6.0U	40	40	98.0	98.0	78.0-114	0.00	18.0

OJECT: 01092683

## EMISTRY ANALYSIS AND PREPARATION

	Lab ID	Client ID	Prep. Lot Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092683-1	BCL-1-G-01	WG49603	25-Sep-01 15:47	JEA	SW9066
	01092683-2	BCL-2-G-01	WG49603	25-Sep-01 15:48	JEA	SW9066
	01092683-3	BCL-3-G-01	WG49603	25-Sep-01 15:48	JEA	SW9066
	01092683-4	BCL-4-G-01	WG49603	25-Sep-01 15:49	JEA	SW9066
	01092683-5	BCL-5-G-01	WG49603	25-Sep-01 15:50	JEA	SW9066
_	01092683-6	BCL-5-G-02	WG49603	25-Sep-01 15:53	JEA	SW9066
	01092683-7	BT-15-G-01	WG49603	25-Sep-01 15:58	JEA	SW9066
	01092683-8	BFB2-G-01	WG49603	25-Sep-01 15:59	JEA	SW9066

#### METHOD BLANK

Laboratory ID: WG49603-3 Analysis Lot: WG49603 Sample Tag: N/A

Analyte Units Value RDL Analysis Date

Phenolics MG/L 0.0050U 0.0050 25-Sep-01 15:45

## LABORATORY CONTROL SAMPLE

Laboratory ID: WG49603-4 Analysis Lot: WG49603 Sample Tag:

Analyte Units Spiked Measured \*Recovery Limits Analysis Date

Phenolics MG/L 0.100 0.0920 92.0 80.0-120 25-Sep-01 15:46

## TR SPIKE/MATRIX SPIKE DUPLICATE

Laboratory IDs: WG49603-5, WG49603-6 Analysis Lot: WG49603 Sample Spiked: 01092683-5 Site: BCL-5-G-01 Sample Tag:

Amt MS Amt MSD Sample MS MSD MS MSD Rec RPD
Analyte Units Spiked Spiked Value Value Value % Rec % Rec Limits RPD Limits

Phenolics MG/L 0.10 0.10 0.0039 0.095 0.10 91.1 96.1 75.0-125 5.34 20.0

#### TIAL CALIBRATION VERIFICATION

ratory ID: WG49603-1 Analysis Lot: WG49603 Sample Tag:

Analyte Units Spiked Measured \*Recovery Limits Analysis Date

Phenolics MG/L 0.100 0.095 95.0 90.0-110 25-Sep-01 15:41

## TIAL CALIBRATION BLANK

ratory ID: WG49603-2 Analysis Lot: WG49603

Analyte Units Value RDL Analysis Date
Phenolics MG/L 0.0050U 0.0050 25-Sep-01 15:42

#### TINUING CALIBRATION VERIFICATION

ratory ID: WG49603-7 Analysis Lot: WG49603 Sample Tag:

=	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Phenolics	MG/L	0.10	0.094	94.0	90.0-110	25-Sep-01 16:01

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OJECT: 01092683

EMISTRY ANALYSIS AND PREPARATION

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CONTINUING CALIBRATION BLANK

Laboratory ID: WG49603-8 Analysis Lot: WG49603

Analyte	Units	Value	RDL	Analysis Date
Phenolics	MG/L	0.00500	0.0050	25-Sep-01 16:02

SHIPPING & RECEIVING

# 2231 WAT ALTORFER DRIVE PEORIA, 12 61615

PHONE # 309-692-9688 FAX # 309-692-9689





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CLIENT. OF THE ELECTRIC TOTAL OF THE CONTROL OF THE	PROJECT NU	MBER	P.O. NUME	BER .	MEANS S	SHIPPED		·	AL VOIC	P. DEOI	COTE		(FOR LAB USE ONLY)
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	PHONE NUM	MBER	FAX NUME	BER	DATE S				$\overline{}$	• [	7	7	LOGIN # 01092683-8
5010 STONE M.11 ROND		,			9/19	101	ایا ا		nous	l	89	(4	LOGGED BY:
ĊITV	SAMPLER				MATRIX TY	PES:	10	jū	5	Ì	SEN.	3	LAB PROJ. #
STATE 3.60 MING TO N, IN 47408	(PLEASE PRIN				WW-WASTEN	VATER	57.0	3	S		ા	7	TEMPLATE:
CONTACT PERSON	SAMPLER'S	/RAA	\$95 <u>.</u>	:	GW-GROUND WWSL-SLUD	WATER	NE	12	à	.	110	C752	PROJ. MGR.:
BOB ATEN	SIGNATURE	Dunt			NAS-SOLID		100	76	1	X	W W	· wo	·
SAMPLE DESCRIPTION	DATE	TIME	SAMPL GRAB	E TYPE COMP	MATRIX TYPE	TOTAL # OF CONT	10Tx	210	101	1/	SET	DNG	REMARKS
BCL-1-6-01 (m,x)	9/18/01	18:00	×		6W	3	χ	χ	X	*			
BCL-2-6-01 (m,x)	9/18/01	18:15	×		6W	3	Y	メ	+	X			
BEL-3-6-01 (m,x)	9/18/01	17:50	×		ow	3	X	*	メ	4			
RC1-4-6-01 (mx)	9/18/01	17:40	X		GW	3	X	*	X	X			
BCL-5-6-01 (m,x)	9/18/01	17:30	X		6W	9	4	×	4	X			EXTEN VOLUME FOR MS/MSD
BCL-5-6-02 (M,X)	7/18/01	17:30	×		GW	3	7	7	*	4			
BCL-5-6-01 (m,x) BCL-5-6-02 (m,x) BT-15-6-01 (m,x)	9/18/01	18:40	8		GW	3	×	*	*	*			
BFB2-6-01 (m,x)	9/18/01	14:40	×		6W	3	×	×	X	X			
		ļ 					<u></u>						
													<u> </u>
TURNAROUND TIME REQUESTED (PLEASE CIRCLE)  (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)	ORMAL	<del>FIU8I1</del>			6	this area yo	ou rego	uest tha	at the I	lab noti	ify you,	before pro	ot at the lab. By initialing occeeding with analysis, if
RUSH RESULTS VIA (PLEASE CIRCLE) FA	×	PHONE				this area yo	ou ailo	w the la					6.0°C. By not initialing esting regardless of the
	RENT FROM ABOVE:				J	sample ten							
7 BEHNQUISHED BY: (SIGNATURE)	TE RECEIVE	ED BY: (SIGNAT	TURE)				) 0	ATE		8	co	MMENTS:	(FOR LAB USE ONLY)
VI HE THE	ME :						-	TIME					
	730 RECEIVI	ED AT LAB BY:	(SIGNATUE	RE)	<del></del> _			ATE ,					E UPON RECEIPT COOK
			,	<i>,</i>	-	11	9	, ,	ኅ/II s	AMPLE	(S) RE	CEIVED O	ED PRIOR TO RECEIPT (YOR N
τ	IME /	Far	ท	100	/	//		TIME	∥в	OTTLE	S FILLI	ED WITH	GOOD CONDITION OF N ADEQUATE VOLUME OOR N ITHIN HOLD TIME(S) OOR N
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## PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section.

elivery Method:	Drop Off	Commerica	al Carrier (UPS	S, FEDEX, etc.)	Lab	oratory Pick-Up
Project Earth	Tech/ke	15 tone	Cooler	3 of $4$		
	, ,		SHIUUIUS	· Container # (PD	C / Other):	
Received (date time)	9-19-01	18:20		By:	4RH	
Opened (If different)				By:		
Preliminary Examin	ation Checklist					·
Did the shipping containing the shipping containing the shipping do (Place any shipping do	& air bill #:	•				YES NO NA
(Trues and surkhing a						
Were custody seals on	the outside of the	shipping con	ntainer?	*************************	(	YES NO*
If YES, a: Were the cu	istody seals intact	upon arrival?	) 			YES NO*
	eal Date and Name					
w	. 1 (202) 1	•				
Was the Chain of Cust						YES NO*
If YES, a: Was the CC	C fully executed i	n ink by the s	shipper?		•••••	YES NO*
b: COC #:	0927	19713- C	4127/01			
	oject identifiable fr			••••	•••••	YES NO*
	was this determine					
d: Was the CC	OC properly signed	as received l	by the Labor	atory	*********	YES NO*
hat was the tempera	ture in the Cooler?	C Dec	- C			
Were samples received	d within criteria of	2 6° Dog C2	5 C.			(YES )NO*
	ater/Wastewater ar					(IES)NO*
Did the cooler contain						VES NO*
Dia are controlled	100	• • • • • • • • • • • • • • • • • • • •	••••••		***********	CLD NO
Sample Examination	& Check-In Chec	<u>:klist</u>				
Were samples package	ed in conformance	to generally	accepted pra	ctices?	•••••	YES NO*
Did all sample contain	ers arrive intact an	d sealed?				YES NO*
Did all sample contain						ES NO*
	ainers possessed ta					
Were caps of individua	=	_		-		YES NO*
Did all labels and/or ta						YES NO*
	- <b>6</b> 8					
Were QC samples incl	uded?					YES NO
Did pH checks confirm	indicated present	ations? (if an	unlicable)			YES NO NA
Did volumes, containe	•	, .	• '			YES NO*
Were VOA vials (water			•			YES NO NA
Wole Voll Viais (Wate	ns) noo nom odoo	ios: (ii appiii	ouo10)	•••••	**********	TES NO COL
If any NO*, Proceed w	vith Login (YES / 1	NO) Project	t Manager:_	D	ate:	
tails/Comments:						

## Appendix E Sheen Pond Groundwater Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092688

November 7, 2001

Earth Tech

Project: Sheen Pond/Waters

SDG #01092688

TABLE OF CONTENTS

## TABLE OF CONTENTS SDG #01092688

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QC Summary	09
Shipping and Receiving	

**CASE NARRATIVE** 



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

## CASE NARRATIVE - Earth Tech/Keystone

## Sheen Pond-Waters Project No. 19718.09

PDC Laboratories, Inc. received 5 water samples on September 19, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092688 for total metals and PCB analysis.

Sample	Id's	Date			
Field	Lab	Collected	Received		
NT-5A-G-01 (M,P)	01092688-1	09/19/01	09/19/01		
NT-19B-G-01 (M,P)	01092688-2	09/19/01	09/19/01		
NT-19B-G-02 (M,P)	01092688-3	09/19/01	09/19/01		
NFB-G-01 (M,P)	01092688-4	09/19/01	09/19/01		
NRB-G-01 (M,P)	01092688-5	09/19/01	09/19/01		

## **Project Summary**

These samples were prepared and analyzed for Earth Tech/ Keystone by the following methods: Total Metals by Method 200.8; PCBs by Method 608.

## Metals QC Summary

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092688-1 for the total metal analyses. All recoveries were within specified QC criteria.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

All Interference Check Samples were within QC criteria.





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## **PCBs QC Summary**

All holding time criteria were met for all samples.

All Continuing Calibration Standards met the acceptance criteria of the method.

All Method Blanks were free of contamination for target analytes.

All Surrogate recoveries were within method QC criteria.

The associated Laboratory Control Samples (LCS) were within acceptance criteria.

## Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Barliara Beard	Name:	Barbara Beard	
Date:	McRanba 7,01	Title:	Project Manager	

EAR01092688.DOC



## PDC Laboratories, Inc. DATA QUALIFIERS

•	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
E	present in the method blank at
C	The batch control sample failed to meet the required acceptance criteria.
E	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
K	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
S	Surrogate compound diluted below a reliable quantitation level.
τ	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery falled to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
ΝA	Not analyzed.
٧R	Not requested.
(	Miscellaneous; see comments.

TABULATED RESULTS



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Date Received: 09/19/01 Date Reported: 11/05/01

Purchase Order:

Customer No. 205746

Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

	Clien	x Sample No.: t Description: Site/Locator: ate Collected:	01092688-1 205746 NT-5A-G-01 (M,P) 19-SEP-01 12:45:00	01092688-2 205746 NT-19B-G-01 (M,P) 19-SEP-01 13:10:00	01092688-3 205746 NT-19B-G-02 (M,P) 19-SEP-01 13:15:00
Method	Parameter		undiluted	undiluted	undiluted
PA 608	Aroclor 1254	ug/i			
PA 200.8	Arsenic	mg/l	0.00085 J	0.0016	0.0005 J
PA 200.8	Cadmium	mg/i	0.005 U	0.005 U	0.005 ป
PA 200.8	Chromium	mg/l	0.0086 J	0.0047 J	0.001 J
PA 200.8	Copper	mg/l	0.0045 J	0.0084 J	0.00034 J
PA 200.8	Lead	mg/l	0.0074	0.0066	0.0005 J
PA 200.8	Zinc	mg/l	0.022	0.09	0.01 J





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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/19/01 Date Reported: 11/05/01

Purchase Order:

Customer No. 205746

Method	Laboratory Sample No.: Client Description: Site/Locator: Date Collected: Parameter		01092688-4 205746 NFB-G-01 (M,P) 19-SEP-01 11:45:00 undiluted	01092688-5 205746 NRB-G-01 (M,P) 19-SEP-01 11:55:00 undiluted	01092688-5 205746 NRB-G-01 (M,P) 19-SEP-01 11:55:00 C1:D1:1	
PA 608	Aroclor 1254	ug/i			1 U	
PA 200.8	Arsenic	mg/l	0.001 U	0.001 U		
PA 200.8	Cadmium	mg/l	0.018	0.005 U	•	
PA 200.8	Chromium	mg/l	0.01 U	0.01 U		
PA 200.8	Copper	mg/l	0.025 U	0.025 U		
PA 200.8	Lead	mg/l	0.001 J	0.003 U		
PA 200.8	Zinc	mg/l	0.016 J	0.0073 J		



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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/19/01 Date Reported: 11/05/01

Purchase Order:

Customer No. 205746

Site/l		y Sample No.; t Description: Site/Locator: Pate Collected:	01092688-6 205746 NFB-213-G-01 11-OCT-01 10:30:00 C1:D1:1	01092688-7 205746 NT-5A-G-01 11-OCT-01 11:40:00 C1:D1:1	01092688-8 205746 NT-19B-G-01 11-OCT-01 12:40:00 C1:D1:1
EPA 608	Arocior 1254	ug/l	1 U	1 U	1 U
EPA 200.8	Arsenic	mg/i			
PA 200.8	Cadmium	mg/l			
PA 200.8	Chromium	mg/l			
PA 200.8	Copper	mg/l			
PA 200.8	Lead	mg/l			
PA 200.8	Zinc	mg/l	·		·



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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/19/01 Date Reported: 11/05/01

Purchase Order:

Customer No. 205746

Laboratory Sample No.:

Client Description: Site/Locator:

Date Collected:

01092688-9 205746 NT-19-G-02

11-OCT-01 12:50:00

	L.	11 001 01 12:00:00				
Method	Parameter		C1:D1:1			
EPA 608	Aroclor 1254	ug/l	1 U			
PA 200.8	Arsenic	mg/i				
PA 200.8	Cadmium	mg/l				
EPA 200.8	Chromium	mg/l				
PA 200.8	Copper	mg/l				
EPA 200.8	Lead	mg/l				
=PA 200.8	Zinc	mg/l				

DATES & DILUTIONS REPORT

<b>-1</b> 1-05-01 15:21		PD	C Laboratories, In			. Pag	e 1		
Joi	Dil. Factor M	easure Dat	Hold Date	Batch ID	Assoc.Code	Dil. Factor	Analysis Dat	Analyis Hold Date	Analysis Batch
ab ID	8-1 <u>( </u>	್ಷಣ್ಣ Client I	D NT-5A-G-01 (N	(P)	Collect Date: 409	9/19/01:12:4	5 ∴ Rece	eive Date: //09/	9/01/18/20
FED AS, 200.8	09	/24/01 13:00	03/18/02 12:45	5 WG50197	PREP FOR	1	09/26/01 12:	25 03/18/02 1	2:45 WG50238
FED CD, 200.8	09/	/24/01 13:00	03/18/02 12:45	5 WG50197		1	09/26/01 12:		2:45 WG50238
ED CR, 200.8	09/	/24/01 13:00	03/18/02 12:45			1	09/26/01 12:		2:45 WG50238
FED CU, 200.8	09/	/24/01 13:00	03/18/02 12:45	WG50197		1	09/26/01 12:		2:45` WG50238
FED PB, 200.8	09/	24/01 13:00	03/18/02 12:45		PREP FOR	1	09/26/01 12:2		2:45 WG50238
D ZN, 200.8	09/	24/01 13:00	03/18/02 12:45	WG50197	PREP FOR	1	09/26/01 12:2	25 03/18/02 1:	2:45 WG50238
саb ID:01092688	<b>-2</b>	Client II	NT-198-G-01 (N	ΛP) veraβC	ollect Date:   09	/19/01 13:1	0 <sub>≨</sub> i≟ ∴Rece	ive Date: 09/1	9/01 18:20
■D AS, 200.8	09/	24/01 13:00	03/18/02 13:10	WG50197	PREP FOR	1	09/26/01 12:0	03/18/02 13	3:10 WG50238
D CD, 200.8		24/01 13:00	03/18/02 13:10		PREP FOR	1	09/26/01 12:0		3:10 WG50238
FED CR, 200.8	09/	24/01 13:00	03/18/02 13:10	WG50197	PREP FOR	1	09/26/01 12:0		3:10 WG50238
■ED CU, 200.8	09/	24/01 13:00	03/18/02 13:10	WG50197	PREP FOR	1	09/26/01 12:0	3 03/18/02 13	3:10 WG50238
D PB, 200.8		24/01 13:00	03/18/02 13:10	WG50197	PREP FOR	1	09/26/01 12:0		3:10 WG50238
FED ZN, 200.8	09/2	24/01 13:00	03/18/02 13:10	WG50197	PREP FOR	1	09/26/01 12:0	3 03/18/02 13	:10 WG50238
b ID: 01092688	<b>-3</b>	Client ID	NT-19B-G-02 (N		ollect Date:: 09/	/19/01 13:1:	Recei	ve Date: 09/19	9/01-18:20
D AS, 200.8	09/2	24/01 13:00	03/18/02 13:15	WG50197	PREP FOR	1	09/26/01 12:0	8 03/18/02 13	:15 WG50238
FED CD, 200.8		24/01 13:00	03/18/02 13:15		PREP FOR	1	09/26/01 12:0		:15 WG50238
D CR, 200.8		24/01 13:00	03/18/02 13:15		PREP FOR	1	09/26/01 12:0		:15 WG50238
D CU, 200.8		24/01 13:00	03/18/02 13:15		PREP FOR	1	09/26/01 12:0		:15 WG50238
FED PB, 200.8		24/01 13:00	03/18/02 13:15		PREP FOR	1	09/26/01 12:0		:15 WG50238
200.8		24/01 13:00	03/18/02 13:15	WG50197	PREP FOR	1	09/26/01 12:0		:15 WG50238
D: 01092688	4	Client ID	NFB-G-01 (M,P)	::	ollect Date: 09/	19/01 11:45	Recei	ve.Date: 09/15	/01 18:20
FED AS, 200.8	09/2	4/01 13:00	03/18/02 11:45	WG50197	PREP FOR	1	09/26/01 12:1:	3 03/18/02 11:	45 WG50238
F D CD, 200.8		4/01 13:00	03/18/02 11:45	WG50197	PREP FOR	1	09/26/01 12:1:		45 WG50238
FED CR, 200.8		4/01 13:00		WG50197	PREP FOR	1	09/26/01 12:13		45 WG50238
FED CU, 200.8		4/01 13:00	03/18/02 11:45	WG50197	PREP FOR	1	09/26/01 12:13		45 WG50238
PB, 200.8		4/01 13:00	03/18/02 11:45	WG50197	PREP FOR	1	09/26/01 12:13	3 03/18/02 11:	45 WG50238
FED ZN, 200.8	09/2	4/01 13:00	03/18/02 11:45	WG50197	PREP FOR	1	09/26/01 12:13		45 WG50238
Lab ID: 01092688-	5	Client ID	NRB-G-01 (M.P)	Co	llect Date: .09/	19/01 11:55	Receiv	/e Date: ∵09/19	01.48.20
F D AS, 200.8	09/2	4/01 13:00	03/18/02 11:55	WG50197	PREP FOR	1	09/26/01 12:19	03/18/02 11:	55 WG50238
FED CD, 200.8		4/01 13:00	03/18/02 11:55		PREP FOR		09/26/01 12:19		55 WG50238
RED CR, 200.8		4/01 13:00	03/18/02 11:55		PREP FOR		09/26/01 12:19		55 WG50238
F CU, 200.8		4/01 13:00	03/18/02 11:55		PREP FOR		09/26/01 12:19		
FED PB, 200.8		4/01 13:00	03/18/02 11:55		PREP FOR		09/26/01 12:19	•	
FED ZN, 200.8		4/01 13:00	03/18/02 11:55		PREP FOR		09/26/01 12:19		55 WG50238
F M6080	- <del>-</del>						10/19/01 18:16		55 WG50477
Lab ID: 01092688-	5	Client ID	NFB-213-G-01	Со	lect Date: 10/1	1/01 10:30	Receiv	e Date: , 10/1//	01:15:00
F M6080		ئيو انه ان ت ر				1	10/19/01 18:52	11/24/01 12:0	00 WG50477
La. ID 01092688-		Client ID	NT-5A-G-01	Col	lect Date: -10/1				
the state of the s	ment perceptable to the PS	estre properties Alberta	anar an istoria istori <del>li (1</del> 25) (1250 a.)	रक्षात् कृति हिन्द्रकात् । निर्मा	e euro a tropiani a cari di Santa	Carl For Bones Wale	te species and and the second	en en en en en en en en en en en en en e	or to see the property of the second of
FED M6080	rai i engan se se	· Algarita	NT-19B-G-01	a to y trouvent <b>Pal</b>	Set Date: 4074		10/19/01 19:28		
ID:: 01092688-8		"Clietifin	141-130-0-01	44 OI	COL Date. 10/1	1701212,40	CE CONTROLLIN	c Date. I U/I II	
D N						1	10/19/01 20:04	11/24/01 12:0	00 WG50477

O1092688-9 Client ID NT-19-G-02 Collect Date: 10/11/01 12:50 Receive Date: 10/11/01 15:00

**QC SUMMARY** 

OJECT: 01092688

METALS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

CROSS REFERENCE REPORT

	Lab ID	Client ID	Prep. Lot Ana	lysis Lot	Analysis Date	Analyst	Method Sample Tag
_	01092688-1	NT-5A-G-01 (M,P)	WG50197	WG50238	26-Sep-01 12:25	JTM	EPA 200.8
)	01092688-2	NT-19B-G-01 (M, P)	WG50197	WG50238	26-Sep-01 12:03	JTM	EPA 200.8
	01092688-3	NT-19B-G-02 (M, P)	WG50197	WG50238	26-Sep-01 12:08	JTM	EPA 200.8
•	01092688-4	NFB-G-01 (M,P)	WG50197	WG50238	26-Sep-01 12:13	JTM	EPA 200.8
	01092688-5	NRB-G-01 (M,P)	WG50197	WG50238	26-Sep-01 12:19	JTM	EPA 200.8

THOD BLANK

Appratory ID: WG50197-1 Analysis Lot: WG50238 Sample Tag: WG50197

Analyte	Units	Value	RDL	Analysis Date
 Chromium	MG/L	0.0100	0.010	26-Sep-01 11:57
Copper	MG/L	0.0250	0.025	26-Sep-01 11:57
Zinc	MG/L	0.0034J	0.020	26-Sep-01.11:57
Arsenic	MG/L	0.00100	0.0010	26-Sep-01 11:57
Cadmium	MG/L	0.0050U	0.0050	26-Sep-01 11:57
Lead	MG/I.	0.00300	0.0030	26-Sep-01 11:57

ORATORY CONTROL SAMPLE

TID: WG50197-2 Analysis Lot: WG50238	Sample	Tag:
--------------------------------------	--------	------

 Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
 Chromium	MG/L	5.55	6.00	108	85.0-115	26-Sep-01 12:43
Copper	MG/L	5.55	5.60	101	85.0-115	26-Sep-01 12:43
Zinc	MG/L	5.55	5.90	106	85.0-115	26-Sep-01 12:43
Arsenic	MG/L	5.55	5.80	104	85.0-115	26-Sep-01 12:43
Cadmium	MG/L	5.55	5.60	101	85.0-115	26-Sep-01 12:43
Lead	MG/L	5,55	5.80	104	85.0-115	26-Sep-01 12:43

RIX SPIKE/MATRIX SPIKE DUPLICATE

ratory IDs: WG50197-3, WG50197-4 Analysis Lot: WG50238 Sample Spiked: 01092688-1 Site: NT-5A-G-01 (M,P) Sample Tag:

_	Analyte	Units		Amt MSD Spiked	-	MS Value	MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits
	Chromium	MG/L	5.5	5.5	0.0086	5.4	5.5	90.3	92.1	70.0-130	1.97	20.0
	Copper	MG/L	5.5	5.5	0.0045	5.1	5.1	88.2	88.2	70.0-130	0.00	20.0
_	Zinc	MG/L	5.5	5.5	0.022	5.4	5.5	79.4	81.3	70.0-130	2.36	20.0
	Arsenic	MG/L	5.5	5.5	0.00085	5.4	5.5	96.6	98.4	70.0-130	1.85	20.0
<b>=</b>	Cadmium	MG/L	5.5	5.5	0.00500	5.2	5.3	93.7	95.5	70.0-130	1.90	20.0
	Lead	MG/L	5.5	5.5	0.0074	5.3	5.5	89.5	93.1	70.0-130	3.94	20.0

ONTINUING CALIBRATION BLANK

aboratory ID: WG50238-2 Analysis Lot: WG50238

_	Analyte		Value	RDL	Analysis Date
	Chromium	MG/L	0.0100	0.010	26-Sep-01 11:11
=	Copper	MG/L	0.0250	0.025	26-Sep-01 11:11

Page : 1 23-Oct-2001 13:10

OJECT: 01092688

ET S ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

INTINUING CALIBRATION BLANK

Laboratory ID: WG50238-2, WG50197-4 Analysis Lot: WG50238 Sample Tag: 01092688-1 NT-5A-G-01 (M,P) Sample Tag:

	Units Units	Value Spiked		Analysis Value		Value	% Rec	% Rec	Limits	RPD	Limits	RPD
Zinc Arsenic Cadmium Lead	MG/L MG/L	0.02 0.001 0.005 0.003	0.0 UO	.020 0010 0050	26-Sep-01 26-Sep-01 26-Sep-01 26-Sep-01	11:11						

Laboratory ID: WG50238-6 Analysis Lot: WG50238

Analyte	Units	Value	RDL	Analysis Date
Chromium	MG/L	0.0100	0.010	26-Sep-01 12:55
Copper	MG/L	0.0250	0.025	26-Sep-01 12:55
Zinc	MG/L	0.00020J	0.020	26-Sep-01 12:55
Arsenic	MG/L	6.5e-05J	0.0010	26-Sep-01 12:55
Cadmium	MG/L	0.00500	0.0050	26-Sep-01 12:55
Lead	MG/L	0.00300	0.0030	26-Sep-01 12:55

TERFERENCE CHECK SAMPLE - A

aboratory ID: WG50238-3 Analysis Lot: WG50238

	Date
Chromium MG/L 0.0 0.00076 N/A N/A 26-Sep-01 11:41 Copper MG/L 0.0 0.00073 N/A N/A 26-Sep-01 11:41 Zinc MG/L 0.0 0.0036 N/A N/A 26-Sep-01 11:41 Arsenic MG/L 0.0 3.4e-05 N/A N/A 26-Sep-01 11:41 Cadmium MG/L 0.0 -6.9e-05 N/A N/A 26-Sep-01 11:41 Lead MG/L 0.0 0.00029 N/A N/A 26-Sep-01 11:41	

TERFERENCE CHECK SAMPLE - AB

bratory ID: WG50238-4 Analysis Lot: WG50238

J 	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Chromium	MG/L	0.050	0.052	104	80.0-120	26-Sep-01 11:47
	Copper	MG/L	0.050	0.048	96.3	80.0-120	26-Sep-01 11:47
	Zinc	MG/L	0.10	0.10	99.6	80.0-120	26-Sep-01 11:47
	Arsenic	MG/L	0.010	0.0098	98.0	80.0-120	26-Sep-01 11:47
	Cadmium	MG/L	0.10	0.097	97.5	80.0-120	26-Sep-01 11:47
•	Lead	MG/L	0.0050	0.0056	112	80.0-120	26-Sep-01 11:47

TINUING CALIBRATION VERIFICATION

ratory ID: WG50238-1 Analysis Lot: WG50238 Sample Tag:

<del></del>	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Chromium	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 11:06
	Copper	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 11:06
	Zinc	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 11:06
	Arsenic	MG/L	0.025	0.024	96.0	90.0-110	26-Sep-01 11:06
	Cadmium	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 11:06
	Lead	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 11:06

eratory ID: WG50238-5 Analysis Lot: WG50238 Sample Tag:

Analyte Units Spiked Measured Recovery Limits Analysis Date

Page : 2 23-Oct-2001 13:10

OJECT: 01092688

ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

ONTINUING CALIBRATION VERIFICATION

Laboratory ID: WG50238-5 Analysis Lot: WG50238 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 12:50
Copper	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 12:50
Zinc	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 12:50
Arsenic	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 12:50
Cadmium	MG/L	0.025	0.024	96.0	90.0-110	26-Sep-01 12:50
Lead	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 12:50

POJECT: 01092688

SENT VOLATILE PESTICIDES BY GC (EPA METHOD 608)

CROSS REFERENCE REPORT

Lab ID	Client ID	Prep. Lot Analysis Lot	Analysis Date	Analyst	Method Sample Tag
01092688-5 01092688-6 01092688-7 01092688-8 01092688-9	NRB-G-01 (M, P) NFB-213-G-01 NT-5A-G-01 NT-19B-G-01 NT-19-G-02	\G50477 \G50477 \G50477	19-Oct-01 18:16 19-Oct-01 18:52 19-Oct-01 19:28 19-Oct-01 20:04 19-Oct-01 20:40	AG AG AG AG AG	EPA 608 C1:D1:1 EPA 608 C1:D1:1 EPA 608 C1:D1:1 EPA 608 C1:D1:1 EPA 608 C1:D1:1

## THOD BLANK

eboratory ID: WG50141-5	Analysis Lot: WG50477	Prep Batch: N/A	Sample Tag: C1:D1:1

Anal	yte Units	Value	RDL	Analysis Date
Aroclor 1	.221 UG/L	1.00	1.0	19-Oct-01 14:05
Aroclor 1	.232 UG/L	0.500	0.50	19-Oct-01 14:05
Aroclor 1	242 UG/L	0.500	0.50	19-Oct-01 14:05
Aroclor 1	248 UG/L	0.500	0.50	19-Oct-01 14:05
Aroclor 1	254 UG/L	1.00	1.0	19-Oct-01 14:05
Aroclor 1	260 UG/L	1.00	1.0	19-Oct-01 14:05

oratory ID: WG50434-1 Analysis Lot: WG50477 Prep Batch: N/A Sample Tag: Cl:D1:1

Analyte	Units	Value	RDL	Analysis Date
Aroclor 1254	UG/L	1.0U	1.0	19-Oct-01 15:53

#### LABORATORY CONTROL SAMPLE

Labratory ID: WG50141-6 Analysis Lot: WG50477 Sample Tag: C1:D1:1

	Analyte		Spiked		*Recovery		Analysis Date
- 1							******
	Aroclor 1016	UG/L	2.00	1.90	95.0	50.0-150	19-Oct-01 14:41
	Aroclor 1260	UG/L	2.00	2.00	100	50.0-150	19-Oct-01 14:41

Laboratory ID: WG50141-7 Analysis Lot: WG50477 Sample Tag: C1:D1:1

Analyte		Spiked		*Recovery		Analysis Date
Aroclor 1016			1.89		50.0-150	19-Oct-01 15:17
Aroclor 1260	UG/L	2.00	2.05	102	50.0-150	19-Oct-01 15:17

ratory ID: WG50434-2 Analysis Lot: WG50477 Sample Tag: Cl:Dl:1

_	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aroc	102 1016		2 00	1 80		50 0-150	19-Oct-01 16:29

Page : 1 05-Nov-2001 16:11

ROJECT: 01092688

VOLATILE PESTICIDES BY GC (EPA METHOD 608)

ABORATORY CONTROL SAMPLE

Laboratory ID: WG50434-2 Analysis Lot: WG50477 Sample Tag: C1:D1:1

Analyte	Units	Spiked	Measured	*Recovery	Limits	
Aroclor 1260	UG/L	2.00	1.90	95.0	50.0-150	19-Oct-01 16:29

## WATRIX SPIKE/MATRIX SPIKE DUPLICATE

Laboratory IDs: WG50434-3, WG50434-4 A	Analysis Lot: WG50477	Sample Spiked: 01092688-7	Client ID: NT-5A-G-01	Sample Tag: C1:D1:1
--	-----------------------	---------------------------	-----------------------	---------------------

 Analyte	Spiked	_	Value	Value				Rec Limits		RPD Limits
roclor 1016 roclor 1260		4.0		3.7	3.7	92.5	92.5		0.00	20.0

#### ONTINUING CALIBRATION VERIFICATION

boratory ID: WG50477-2 Analysis Lot: WG50477 Sample Tag: C1:D1:1

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aroclor 1254	UG/L	500	450	90.0	85.0-115	19-Oct-01 21:52

boratory ID: WG50477-3 Analysis Lot: WG50477 Sample Tag: C1:D1:1

Analyt	e Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aroclor 101	6 UG/L	500	520	104	85.0-115	19-Oct-01 22:28
Aroclor 126	UG/L	500	510	102	85.0-115	19-Oct-01 22:28
Decachlorobiphenyl (Surr.	UG/L	200	213.2	107	85.0-115	19-Oct-01 22:28
Tetrachloro-m-xylene (Surr.	UG/L	200	207.4	104	85.0-115	19-Oct-01 22:28

## TRROGATE RECOVERIES

poratory ID: 01092688-5 Analy	sis Lot: WG50477	Client ID: NRB-G-01	(M, P)	Sample Tag: C1:D1:1
-------------------------------	------------------	---------------------	--------	---------------------

	Analyte		Spiked		*Recovery		Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene	(Surr.)	UG/L UG/L	0.500 0.500	0.518 0.447	104	20.0-173.83 35.2-143.88	19-Oct-01 18:16 19-Oct-01 18:16

Laboratory ID: 01092688-6 Analysis Lot: WG50477 Client ID: NFB-213-G-01 Sample Tag: C1:D1:1

ı		Analyte		Spiked		%Recovery	Limits	Analysis Date
i	Decachlorobiphenyl		UG/L	0.500	0.407		20.0-173.83	19-Oct-01 18:52
	Tetrachloro-m-vylene	(Surr )	IIG/I	0.500	0.330	66.0	35 2-143 88	19-Oct-01 18:52

poratory ID: 01092688-7 Analysis Lot: WG50477 Client ID: NT-5A-G-01 Sample Tag: Cl:Dl:1

<b></b>	Analyte		•		*Recovery	Limits	Analysis Date
Decachlorobiphenyl				0.576		20.0-173.83	19-Oct-01 19:28
Tetrachloro-m-xylene	(Surr.)	UG/L	0.500	0.500	100	35.2-143.88	19-Oct-01 19:28

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## ROJECT: 01092688

## SEM VOLATILE PESTICIDES BY GC (EPA METHOD 608)

JRROGATE RECOVERIES

Laboratory ID: 0109268	8-8 A	nalysis :	Lot: WG50477	Clien	t ID: NT-19	B-G-01 Sample 1	Tag: C1:D1:1
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene		UG/L	0.500 0.500	0.383		20.0-173.83 35.2-143.88	19-Oct-01 20:04 19-Oct-01 20:04
oratory ID: 0109268	8-9 Ar	alysis 1	Lot: WG50477	Client	ID: NT-19	-G-02 Sample Ta	g: Cl:Dl:1
_	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl etrachloro-m-xylene		UG/L UG/L	0.500 0.500	0.381	76.2 95.2		19-Oct-01 20:40 19-Oct-01 20:40
Laboratory ID: WG50141	-5 Ana	lysis Lo	ot: WG50477	Client	ID: MB S	ample Tag: C1:D1:	1
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene		UG/L UG/L	0.500 0.500	0.510 0.396	102 79.2	20.0-173.83 35.2-143.88	19-Oct-01 14:05 19-Oct-01 14:05
L oratory ID: WG50141	-6 Ana	lysis Lo	t: WG50477	Client	ID: LCS S	Sample Tag: Cl:Dl	:1
•	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl etrachloro-m-xylene		UG/L UG/L	0.500	0.583 0.452	117 90.4	20.0-173.83 35.2-143.88	19-Oct-01 14:41 19-Oct-01 14:41
Laboratory ID: WG50141-	7 Ana	lysis Lo	t: WG50477	Client	ID: LCSD	Sample Tag: C1:D	1:1
	Analyte	Units	Spiked	Measured	Recovery	Limits	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene		UG/L UG/L	0.500	0.590 0.431	118 86.2	20.0-173.83 35.2-143.88	19-Oct-01 15:17 19-Oct-01 15:17
Depratory ID: WG50434-	1 Ana	lysis Lo	t: WG50477	Client	ID: MB Sa	mple Tag: C1:D1:1	
	Analyte	Units .	Spiked	Measured	Recovery	Limits	Analysis Date
Decachlorobiphenyl trachloro-m-xylene		UG/L UG/L	0.500	0.566	113 92.8		19-Oct-01 15:53 19-Oct-01 15:53

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OJECT: 01092688

SEMINOLATILE PESTICIDES BY GC (EPA METHOD 608)

RROGATE RECOVERIES

Laboratory ID: WG50434-2 Analysis Lot: WG50477 Client ID: LCS Sample	le Tag: Cl:Dl:	Ĺ
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	Analyte		Spiked		*Recovery	Limits	Analysis Date
Decachlorobiphenyl		UG/L	0.500	0.571		20.0-173.83	19-Oct-01 16:29
Tetrachloro-m-xylene	(Surr.)	UG/L	0.500	0.480	96.0	35.2-143.88	19-Oct-01 16:29

pratory ID: WG50434-3 Analysis Lot: WG50477 Client ID: MS Sample Tag: Cl:D1:1

	•	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1	Decachlorobiphenyl	(Surr.)	UG/L	1.00	1.18	118	20.0-173.83	19-Oct-01 17:05
	trachloro-m-xvlene	(Surr.)	UG/L	1.00	0.989	98.9	35.2-143.88	19-Oct-01 17:05

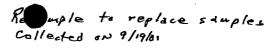
Jaboratory ID: WG50434-4 Analysis Lot: WG50477 Client ID: MSD Sample Tag: Cl:Dl:1

	Analyte	Units	Spiked	Measured	*Recovery		Analysis Date
Decachlorobiphenyl		UG/L	1.00	1.17		20.0-173.83	19-Oct-01 17:41
Tetrachloro-m-xylene	(Surr.)	UG/L	1.00	0.981	98.1	35.2-143.88	19-Oct-01 17:41

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SHIPPING & RECEIVING

PHONE # 309-692-9688 FAX # 309-692-9689



0220

CHAIN OF COSTODY RESURD

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) MEANS SHIPPED PDC PROJECT NUMBER P.O. NUMBER (FOR LAB USE ONLY) Meyotone (Earth Tech)

ADDRESS

5010 Stone Mill Road

CITY
STATE Bloom ington, IN 47408 **ANALYSIS REQUESTED** 19718.09 PHONE NUMBER LOGIN . 01092688-60 mg Pick Un FAX NUMBER 812-812 3360972 336 3991 10/11/01 Ś 9 LAB PROJ. # \_\_\_\_\_ SAMPLER Hach MATRIX TYPES: (PLEASE PRINT) TEMPLATE: GW-GROUND WATER PROJ. MGR.: \_\_\_ CONTACT PERSON WWSL SLUDGE SIGNATURE OTHER: SAMPLE TYPE GRAB COMP 03 MATRIX TOTAL # Ø. SAMPLE DESCRIPTION REMARKS GRAR COLLECTED COLLECTED TYPE OF CONT 10/11/01 10:30 NFB-213-G-01 GW X Extra Sample for MS/MSD NT-5A-G-01 NT-19B-G-01 2 × GW X 101-101 12:40 GW × 10/11/01 GW NT-19-G-02 × NORMAL TURNAROUND TIME REQUESTED (PLEASE CIRCLE) RUSH The sample temperature will be measured upon receipt at the lab. By initialing 5 (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) this area you request that the lab notify you, before proceeding with analysis, if 6 the sample temperature is outside of the range of 0.1-6.0°C. By not initialing RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE this area you allow the lab to proceed with analytical testing regardless of the sample temperature.. FAX # IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE: RELINQUISHED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE) COMMENTS: (FOR LAB USE ONLY) 10/11/01 TIME TIME 1320 SAMPLE TEMPERATURE UPON RECEIPT RELINQUISHED BY: (SIGNATURE RECEIVED AT LAB BY: (SIGNATURE) DATE DATE CHILL PROCESS STARTED PRIOR TO RECEIPT OF OR N SAMPLE(S) RECEIVED ON ICE Q OR N 10-11-01 BOTTLES RECEIVED IN GOOD CONDITION 4 OR N TIME BOTTLES FILLED WITH ADEQUATE VOLUME **OORN** SAMPLES RECEIVED WITHIN HOLD TIME(S) **MORN** 

000016

## PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section.

livery Method:	Drop Off	Commerical	Carrier (UPS, FEDE	X, etc.)	Laboratory	Pick-Up
Project Tetra 7	ech/Key	stone	_Cooler/ Shipping Conta	of / iner#(PDC)	Other):	
Received (date time)_ Opened (If different)_	10-11-61	15:00				
Preliminary Examina	tion Checklist				·	
Did the shipping contains If YES, carrier name & (Place any shipping do	air bill #:		ng slip?		YES	S NO NA
Were custody seals on If YES, a: Were the customer the Sea	tody seals intact	upon arrival?		•••••	YES	) NO*
	C fully executed i	n ink by the shi	•	•••••••••••••••••••••••••••••••••••••••	<del>(ES</del>	) NO* } NO* D NO*
	vas this determine C properly signed		the Laboratory	***************************************		) NO*
was the temperate Were samples received (Processed Wat Did the cooler contain I	within criteria of er/Wastewater ar	2-6° Deg C? e excluded from	n the temperature	criteria)		)10*
Sample Examination &	& Check-In Chec	klist				_
Were samples packaged	in conformance	to generally acc	cepted practices?	•••••••	YES	) NO*
Did all sample container Did all sample container If sample container	s have secure and	i completed lab				NO* NO*
Were caps of individual Did all labels and/or tag.	bottles/vials free	from tape and/	or custody seals?.	•••••••		NO* )NO*
Were QC samples include	ied?	•••••	•••••		<u>(E</u> S)	NO
Did pH checks confirm in Did volumes, containers Were VOA vials (waters	, & preservatives	seem appropris	ate to indicate test	s?	<b>(FES</b> )	NO NA NO*NA
If any NO*, Proceed wit	h Login (YES / N	IO) Project M	lanager:	Date:		
ils/Comments:						



PHONE # 309-692-9688 FAX # 309-692-9689



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CHEAT.			JST BE COMPLET			PRINT	)			******	091901A	Blb 9/3
CLIENTS DOTATION TO A SECOND	PROJECT NUMBER P.O. NU. 19718.09		P.O. NUMBER	MEANS !		(3	3 ANALYSIS REQUESTED			ESTED	(FOR LAB USE ONLY)	į
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CITY	IDI EARE ODIA	SAMPLER (PLEASE PRINT) TRD/RAA SAMPLER'S		MATRIX TYPES:  WW-WASTEWATER  DW-DRINKING WATER  GW-GROUND WATER		75.700		78018	١	- {	LAB PROJ. #	
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BOB ATEN	SAMPLER'S SIGNATURE Labert / Jetur			OTHER:		ر	133	13	8			
	DATE   TIME   SAMPLE TYPE		MATRIX   TOTAL #		1/2	2		6	ļ			
SAMPLE DESCRIPTION	COLLECTED	COLLECTED	GRAB COMP	TYPE	OF CONT	10		7	الو	- [	REMARKS	1
	al la l	17.40		1 1 1 1 1 1 1 1 1	1,1		-	-			EXTER VOLUME FO	~
NT-5A-G-01 (M, P)	7/19/01	12:45	×	GW	4	X	×		$\vdash$		MS/MSP	
NT-198-6-01 (M.P)	9/11/01	13:10	×	GW	2	X	×					
NT-198-6-02 (m. p)	9/19/0)	13:15	$\times$	GU	2	×	X					
NT-19B-G-01 (m,p) NT-19B-G-02 (m,p) NFB-G-01 (m,p) NFB-G-01 (m,p)	9/13/01	11:45		GW	2	×	X					
11PR-6-01 (M N)	9/13/21	11:55	×	WIR	2	X	X					
10/213 0 01 (1, 1)	ו טוייוןי	1,2,0	<del> ^-</del>	TWIC.	<b>-</b>	╁	1.	╁			<del>                                     </del>	
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TURNAROUND TIME REQUESTED (PLEASE CIRCLE)	NORMAI)	1 RUSH	<u> </u>	1	The samp	le tem	peratur	e will t	e measi	ured upon	receipt at the lab. By initialing	
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)				( 6 )							ore proceeding with analysis, if of 0.1-6,0°C. By not initialing	1
•	FAX FFERENT FROM ABOVI	PHONE E-			this area y sample te			lab to	proceed	with analy	rtical testing regardless of the	
RELINQUISHED BY: (SIGNATURE)	DATE RECEI	VED BY: (SIGNA	TURE)		<del></del> -	T	DATE		$\overline{}$	СОММ	ENTS: (FOR LAB USE ONLY)	
() // 10 Ca	1/19/61							(	(B)		<del></del>	
Robert Eller	TIME 730						TIME		_			
RELINQUISHED BY: (SIGNATURE)		VED AT LAB BY	: (SIGNATURE)	<del></del> .	<del></del>	-	DATE	<b>-</b> -  9	SAMPLE	TEMPERA	ATURE UPON RECEIPT OR N	_°c
	/	7 ~		/			9~19	المحا	SAMPLE	(S) RECEI	VED ON ICE GOR N	1
	TIME	1)	$\langle A \rangle$	1		Γ	TIME		BOTTLE	S FILLED 1	WITH ADEQUATE VOLUME OF N	ľ
		le l	<u> </u>	DE			10 is	احر	SAMPLE	S RECEIV	ED WITHIN HOLD TIME(S) OR N	

## PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

SAMPLE RECEIPT FORM
All No responses are to be described in the Details/Comments Section.

Off Commercial Carrier (UPS, FEDEX, etc.)

livery Method: Drop Off Commercial Carrier (UPS, FEDEX, etc.)	(Laboratory Pick-Up)
Project Earth Teh Kay 6 tone Cooler 2 of 4 Shipping Container # (P	DC / Other):
Received (date time) 9-19-61	AL H
Received (date time)         9-19-01         By:           Opened (If different)         By:	
Preliminary Examination Checklist	
Did the shipping container arrive with an air bill/shipping slip?  If YES, carrier name & air bill #:	
(Place any shipping documentation in file folder)	
Were custody seals on the outside of the shipping container?	VES NO*
If YES, a: Were the custody seals intact upon arrival?	
b: Enter the Seal Date and Name (enter "NA" if not available): 9-19-0	
Was the Chain of Custody (COC) documentation provided with the shipment?	
If YES, a: Was the COC fully executed in ink by the shipper?	
b: COC #: 09 19 01 A bisent 9/2/101	
c: Was the project identifiable from the COC?	
If No, how was this determined?  d: Was the COC properly signed as received by the Laboratory	
u. Was the coc property signed as received by the Laboratory	ES/NO*
at was the temperature in the Cooler? ° Deg C.	
Were samples received within criteria of 2-6° Deg C?	YES NO*
(Processed Water/Wastewater are excluded from the temperature criteria)	
Did the cooler contain Ice?	(YES) NO*
Sample Examination & Check-In Checklist	
Were samples packaged in conformance to generally accepted practices?	YES NO*
Did all sample containers arrive intact and sealed?	
Did all sample containers have secure and completed labels?	YES NO*
If sample containers possessed tags, circle: Tags only Tags + Labels	
Were caps of individual bottles/vials free from tape and/or custody seals?	
Did all labels and/or tags agree with COC?	YES) NO*
Were QC samples included?	YES NO
Did pH checks confirm indicated preservations? (if applicable)	YES NO
Did volumes, containers, & preservatives seem appropriate to indicate tests?	
Were VOA vials (waters) free from bubbles? (if applicable)	
If any NO*, Proceed with Login (YES / NO) Project Manager:	Pate:
I ails/Comments:	

## Appendix F Sheen Pond Soil Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092691

November 7, 2001

Earth Tech

Project: Sheen Pond/Soils

SDG #01092691

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## TABLE OF CONTENTS SDG #01092691

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Dates and Dilutions	_08
QC Summary	10
Shipping and Receiving	

**CASE NARRATIVE** 



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

## CASE NARRATIVE – Earth Tech/Keystone

Sheen Pond-Soils Project No. 19718.09

PDC Laboratories, Inc. received 6 soil samples on September 19, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092691 for Metals and PCB analysis.

Sampl	Sample Id's		ate
Field	Lab	Collected	Received
N-01-S-01 (P,M)	01092691-1	09/19/01	09/19/01
N-02-S-01 (P,M)	01092691-2	09/19/01	09/19/01
N-02-S-02 (P,M)	01092691-3	09/19/01	09/19/01
N-03-S-01 (P,M)	01092691-4	09/19/01	09/19/01
N-04-S-01 (P,M)	01092691-5	09/19/01	09/19/01
N-05-S-01 (P,M)	01092691-6	09/19/01	09/19/01

## **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/Keystone by the following methods: Total Metals by SW-846 6010; PCBs by Method 8082.

## Metals QC Summary

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092691-2. All recoveries were within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.





P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

A Sample Duplicate was performed on sample 01092691-2. All recoveries were within the method specified QC recovery limits.

All Interference Check Samples were within QC criteria.

### **PCB QC Summary**

All holding time criteria were met for all samples.

All Initial, Continuing Calibration, and Initial Calibration Verification Standards met QC acceptance criteria. Surrogates are not included in the ICV.

All Method Blanks were free of contamination for target analytes.

Surrogate recoveries were within QC acceptance criteria for all samples.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092691-2. All recoveries were within specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

#### Certification

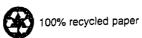
This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Baruary Beard	Name:	Barbara Beard
Date:	Nov. 7,01	Title:	Project Manager

EAR01092691.DOC

# PDC Laboratories, Inc. DATA QUALIFIERS

A	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
C	The batch control sample failed to meet the required acceptance criteria.
E	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
K	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
s	Surrogate compound diluted below a reliable quantitation level.
Т	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery failed to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
٧R	Not requested.
Κ	Miscellaneous; see comments.



TABULATED RESULTS



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



Laboratory Sample No.:	
Client Description:	
Site/Locator:	
Date Collected:	
Parameter	

01092691-1
EARTH_TEC
N-01-S-01 (P,M)
19-SEP-01 13:55:00

01092691-1 EARTH\_TEC N-01-S-01 (P,M) 9-SEP-01 13:55:00 01092691-2 #24974<u>0</u>1EC N-02-S-01 (P,M) 9-SEP-01 14:00:00

 Method	Paramete	Site/Locator: Date Collected: er	19-SEP-01 13:55:00 undiluted	19-SEP-01 13:55:00 C1:D1:1	19-SEP-01 14:00:00 undiluted
SW8082/SW3550B	Aroclor 1254	ug/kg		51 J	
W8082/SW3550B	Aroclor 1254	ug/kg Dry		61 J	
SW6010B	Arsenic	mg/kg	8.6		7
W6010B	Cadmium	mg/kg	1.6		0.59 J
W6010B	Chromium	mg/kg	82 C		19 C
SW6010B	Copper	mg/kg	70		16
W6010B	Lead	mg/kg	120		21
W6010B	Zinc	mg/kg	220		88
SW6010B	Arsenic	mg/kg Dry	10		8.9
W6010B	Cadmium	mg/kg Dry	1.9		0.75 J
SW6010B	Chromium	mg/kg Dry	98 C		24 C
CWECTOB	Copper	mg/kg Dry	83		20
<b>Weed B</b>	Lead	mg/kg Dry	140	·	26
SW6010B	Zinc	mg/kg Dry	260		110
M (18) 2540B	Moisture	%	16		. 21



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01092691-2

01092691-3

01092691-3

Method	Clien	t Description: Site/Locator: late Collected:	EARTH_TEC N-02-S-01 (P,M) 19-SEP-01 14:00:00 C1:D1:1	EARTH_TEC N-02-S-02 (P,M) 19-SEP-01 14:02:00 undiluted	£1,4274,01 <sub>EC</sub> N-02-S-02 (P,M) 19-SEP-01 14:02:00 C1:D1:1
SW8082/SW3550B	Aroclor 1254	ug/kg	160 U		14 J
W8082/SW3550B	Arocior 1254	ug/kg Dry	200 U		18 J
SW6010B	Arsenic	mg/kg	·	5.3	
W6010B	Cadmium	mg/kg		0.5 J	
V6010B	Chromium	mg/kg		19 C	
SW6010B	Copper	mg/kg		14	
V6010B	Lead	mg/kg		22	•
W6010B	Zinc	mg/kg		84	
SW6010B	Arsenic	mg/kg Dry		6.7	
V6010B	Cadmium	mg/kg Dry		0.63 J	
SW6010B	Chromium	mg/kg Dry		24 C	
OV6649B	Copper	mg/kg Dry		18	
V65√B	Lead	mg/kg Dry		28	•
SW6010B	Zinc	mg/kg Dry	•	110	
1 (18) 2540B	Moisture	%		21	



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Method	Client	Sample No.: Description: Site/Locator: ate Collected:	01092691-4 EARTH_TEC N-03-S-01 (P,M) 19-SEP-01 14:15:00 undiluted	01092691-4 EARTH_TEC N-03-S-01 (P,M) 19-SEP-01 14:15:00 C1:D1:1	01092691-5 £A/R7H_1EC N-04-S-01 (P,M) 19-SEP-01 14:25:00 undiluted
SW8082/SW3550B	Aroclor 1254	ug/kg		82 J	***************************************
W8082/SW3550B	Arocior 1254	ug/kg Dry	•	100 J	
SW6010B	Arsenic	mg/kg	5.6		5.3
W6010B	Cadmium	mg/kg	1.3	•	0.46 J
W6010B	Chromium	mg/kg	73 C		18 C
SW6010B	Copper	mg/kg	19		14
W6010B	Lead	mg/kg	41		21
SW6010B	Zinc	mg/kg	160		81
SW6010B	Arsenic	mg/kg Dry	6.8		6.5
W6010B	Cadmium	mg/kg Dry	1.6		0.57 J
SW6010B	Chromium	mg/kg Dry	89 C		22 C
W DB	Соррег	mg/kg Dry	23		17
W6010B	Lead	mg/kg Dry	50	•	26
SW6010B	Zinc	mg/kg Dry	200		100
M (18) 2540B	Moisture	%	18		19





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Method	Clier	y Sample No.: at Description: Site/Locator: Date Collected:	01092691-5 EARTH_TEC N-04-S-01 (P,M) 19-SEP-01 14:25:00 C1:D1:1	01092691-6 EARTH_TEC N-05-S-01 (P,M) 19-SEP-01 14:35:00 undiluted	01092691-6 <b>£ARA-OTEC</b> N-05-S-01 (P,M) 19-SEP-01 14:35:00 C1:D1:1
EW8082/SW3550B	Aroclor 1254	ug/kg	23 J		45 J
W8082/SW3550B	Aroclor 1254	ug/kg Dry	28 J		54 J
SW6010B	Arsenic	mg/kg		3.2	
W6010B	Cadmium	mg/kg		0.67 J	
W6010B	Chromium	mg/kg		22 C	
SW6010B	Copper	mg/kg		15	
W6010B	Lead	mg/kg		23	
SW6010B	Zinc	mg/kg		92	
SW6010B	Arsenic	mg/kg Dry		3.8	
V6010B	Cadmium	mg/kg Dry		0.8 J	
SW6010B	Chromium	mg/kg Dry		26 C	
Vering	Copper	mg/kg Dry		18	
V6010B	Lead	mg/kg Dry		27	
SW6010B	Zinc	mg/kg Dry		110	
71 (18) 2540B	Moisture	%	•	16	



DATES & DILUTIONS REPORT

0-26-01 12:18	PDC Laboratories, Inc.	Page 1
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	Dil							Analula Mald	,
	Dil. Factor	Measure Dat	Hold Date	Batch ID	Assoc.Code		Analysis Dat		Analysis Batch
ab ID: - 01092691	1.74	Client I	D:N-01-S-01 (P,M	) - 20 A C	Collect-Date: 09	/19/01/13:5	5Rec∈	ive Date ::: 09/	19/01/18:20
MOIST		•				1	09/24/01 11:	51 09/26/01 ·	13:55 WG49582
EED AS, 6010		09/25/01 14:00	03/18/02 13:55	WG49640	PREP FOR	1	09/26/01 13:		13:55 WG49769
ED CD, 6010		09/25/01 14:00	03/18/02 13:55			1	09/26/01 13:3		3:55 WG49769
FED CR, 6010		09/25/01 14:00	03/18/02 13:55			1	09/26/01 13:3		3:55 WG49769
EED CU, 6010		09/25/01 14:00	03/18/02 13:55			1	09/26/01 13:3		3:55 WG49769
D PB, 6010		09/25/01 14:00	03/18/02 13:55			1	09/26/01 13:3		3:55 WG49769
FED ZN, 6010		09/25/01 14:00	03/18/02 13:55		PREP FOR	1	09/26/01 13:3		3:55 WG49769
EED M8082		09/28/01 12:00	10/03/01 13:55	WG49741	PREP FOR	1	10/02/01 04:0		2:00 WG49802
D M8082		09/28/01 12:00	10/03/01 13:55	WG49741	PREP FOR	1	10/02/01 04:4		2:00 WG49802
Lab.ID: 01092691-	2	Client IE	N-02-S-01 (P,M)	).		19/01:14:00	Rece		
<b>B</b> IST	. 15 536 (43)		37 ft. ft. 120g ft. 22 - 10 10 10 10 10 10 10 10 10 10 10 10 10						
DIST		00 75 104 44.00	02/42/02 44:00	1MC40640	2252 502	1	09/24/01 11:5		4:00 WG49582
D AS, 6010		09/25/01 14:00	03/18/02 14:00		PREP FOR	1	09/26/01 13:3		4:00 WG49769
FED CD, 6010		09/25/01 14:00	03/18/02 14:00	WG49640 WG49640	PREP FOR	1	09/26/01 13:3		4:00 WG49769
D CR, 6010		09/25/01 14:00	03/18/02 14:00		PREP FOR	1	09/26/01 13:3		4:00 WG49769
D CU, 6010		09/25/01 14:00	03/18/02 14:00	WG49640	PREP FOR	1	09/26/01 13:3		4:00 WG49769
FED PB, 6010		09/25/01 14:00	03/18/02 14:00	WG49640	PREP FOR	1	09/26/01 13:3 09/26/01 13:3		4:00 WG49769
D ZN, 6010 M8082		09/25/01 14:00 09/28/01 12:00	03/18/02 14:00 10/03/01 14:00	WG49741	PREP FOR	1 1	10/02/01 03:2		4:00 WG49769 2:00 WG49802
Lab ID: 01092691-3	Caransar		N-02-S-02 (P,M)		PREP FOR				9/01 18:20
	<u> (1)                                   </u>	<u> </u>		ar agagaran				ter ingliget and the authority to	
			•			1	09/24/01 11:5		1:02 WG49582
■D AS, 6010		09/25/01 14:00	03/18/02 14:02		PREP FOR	1	09/26/01 14:1		1:02 WG49769
FED CD, 6010		09/25/01 14:00	03/18/02 14:02		PREP FOR	1	09/26/01 14:15		1:02 WG49769
F D CR, 6010		09/25/01 14:00	03/18/02 14:02		PREP FOR	1	09/26/01 14:15		1:02 WG49769
FED CU, 6010		09/25/01 14:00	03/18/02 14:02		PREP FOR	1	09/26/01 14:15		1:02 WG49769
FED PB, 6010		09/25/01 14:00	03/18/02 14:02		PREP FOR	1	09/26/01 14:15		:02 WG49769
P D ZN, 6010		09/25/01 14:00	03/18/02 14:02		PREP FOR	1	09/26/01 14:15		:02 WG49769
FED M8082	26. km 1941 (17. kg)	09/28/01 12:00		WG49741	PREP FOR	1 ত/চৰ বৰুৰ	10/02/01 04:42		:00 WG49802
Lab ID: 01092691-4		Cilettio	N-03-S-01 (P,M)		ilect Date. 05/1	9/0 (3(4) (3)	, receiv	e Date	70110.20
NUIST						1	09/24/01 11:51	09/26/01 14	:15 WG49582
FED AS, 6010		09/25/01 14:00	03/18/02 14:15	WG49640	PREP FOR	1	09/26/01 14:20	03/18/02 14	:15 WG49769
FED CD, 6010		09/25/01 14:00	03/18/02 14:15	WG49640	PREP FOR		09/26/01 14:20		:15 WG49769
FCR, 6010		09/25/01 14:00	03/18/02 14:15	WG49640	PREP FOR	1	09/26/01 14:20	03/18/02 14	:15 WG49769
FED CU, 6010		09/25/01 14:00	03/18/02 14:15	WG49640	PREP FOR	1	09/26/01 14:20	03/18/02 14	:15 WG49769
FED PB, 6010		09/25/01 14:00	03/18/02 14:15	WG49640	PREP FOR	1	09/26/01 14:20	03/18/02 14	:15 WG49769
F ZN, 6010		09/25/01 14:00	03/18/02 14:15	WG49640	PREP FOR	1	09/26/01 14:20	03/18/02 14	:15 WG49769
FED M8082		09/28/01 12:00	10/03/01 14:15		PREP FOR		10/02/01 05:19		:00 WG49802
Lab ID: 01092691-5	<b>拉特數學</b>		N-04-S-01 (P,M)	Col	lect Date: .09/1	9/01:14:25	Receiv	e Date: ∴09/19	/01:18:20
MEST						1 (	09/24/01 11:51	09/26/01 14	25 WG49582
FED AS, 6010		09/25/01 14:00	03/18/02 14:25	WG49640	PREP FOR	1 (	09/26/01 14:25		25 WG49769
F CD, 6010		09/25/01 14:00	03/18/02 14:25		PREP FOR	1 (	09/26/01 14:25		25 WG49769
F CR, 6010		09/25/01 14:00	03/18/02 14:25		PREP FOR		09/26/01 14:25		25 WG49769
FED ( 010		09/25/01 14:00	03/18/02 14:25	WG49640	PREP FOR	1 (	09/26/01 14:25	03/18/02 14:	25 WG49769
PB, 6010		09/25/01 14:00	03/18/02 14:25		PREP FOR	1 (	09/26/01 14:25	03/18/02 14:	25 WG49769
F ZN, 6010		09/25/01 14:00	03/18/02 14:25		PREP FOR		9/26/01 14:25		25 WG49769
FED M8082	(	09/28/01 12:00	10/03/01 14:25		PREP FOR	1 1	0/02/01 05:56	11/07/01 12:	00 WG49802

MOIST					1	09/24/01 11:51	09/26/01 14:35 WG49582
FED AS, 6010	09/25/01 14:00	03/18/02 14:35	WG49640	PREP FOR	1	09/26/01 14:30	03/18/02 14:35 WG49769
ED CD, 6010	09/25/01 14:00	03/18/02 14:35	WG49640	PREP FOR	1	09/26/01 14:30	03/18/02 14:35 WG49769
FED CR, 6010	09/25/01 14:00	03/18/02 14:35	WG49640	PREP FOR	1	09/26/01 14:30	03/18/02 14:35 WG49769
EED CU, 6010	09/25/01 14:00	03/18/02 14:35	WG49640	PREP FOR	1	09/26/01 14:30	03/18/02 14:35 WG49769
ED PB, 6010	09/25/01 14:00	03/18/02 14:35	WG49640	PREP FOR	1	09/26/01 14:30	03/18/02 14:35 WG49769
FED ZN, 6010	09/25/01 14:00	03/18/02 14:35	WG49640	PREP FOR	1	09/26/01 14:30	03/18/02 14:35 WG49769
EED M8082	09/28/01 12:00	10/03/01 14:35	WG49741	PREP FOR	1	10/02/01 06:33	11/07/01 12:00 WG49802

**QC SUMMARY** 

ROJECT: 01092691

PALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

CROSS REFERENCE REPORT

} 	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
_	01092691-1	N-01-S-01 (P,M)	WG49640	WG49769	26-Sep-01 13:33	DWK	SW6010B
ŀ	01092691-2	N-02-S-01 (P,M)	WG49640	WG49769	26-Sep-01 13:38	DWK	SW6010B
ľ	01092691-3	N-02-S-02 (P,M)	WG49640	WG49769	26-Sep-01 14:15	DWK	SW6010B
	01092691-4	N-03-S-01 (P,M)	WG49640	WG49769	26-Sep-01 14:20	DWK	SW6010B
	01092691-5	N-04-S-01 (P,M)	WG49640	WG49769	26-Sep-01 14:25	DWK	SW6010B
•	01092691-6	N-05-S-01 (P,M)	WG49640	WG49769	26-Sep-01 14:30	DWK	SW6010B

THOD BLANK

oratory ID: WG49640-1 Analysis Lot: WG49769 Prep Batch: WG49640 Sample Tag:

Analyte	Units	Value	RDL	Analysis Date
Arsenic	MG/KG	U0E.0	0.30	26-Sep-01 13:23
Cadmium	MG/KG	1.00	1.0	26-Sep-01 13:23
Chromium	MG/KG	2.00	2.0	26-Sep-01 13:23
Copper	MG/KG	5.0U	5.0	26-Sep-01 13:23
Lead	MG/KG	0.600	0.60	26-Sep-01 13:23
Zinc	MG/KG	4.00	4.0	26-Sep-01 13:23

LABORATORY CONTROL SAMPLE

ry ID: WG49640-2 Analysis Lot: WG49769 Sample Tag:

	Analyce	Unics	Spiked	measured	*Kecovery	Dimica	Analysis Date
	Arsenic	MG/KG	25.0	23.0	92.0	80.0-120	26-Sep-01 13:27
	Cadmium	MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
•	Chromium	MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
	Copper	MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
•	Lead	MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
	Zinc	MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

oratory IDs: WG49640-3, WG49640-4 Analysis Lot: WG49769 Sample Spiked: 01092691-2 Site: N-02-S-01 (P,M) Sample Tag:

-	Analyte	Units		Amt MSD Spiked	-	MS Value	MSD Value	MS % Rec	MSD * Rec	Rec Limits	RPD	RPD Limits
	Arsenic	MG/KG	508	498	7.0	450	440	85.8	85.6	75.0-125	0.233	20.0
	Cadmium	MG/KG	508	498	0.59	460	450	90.3	90.1	75.0-125	0.222	20.0
	Chromium	MG/KG	510	498	19	480	480	86.8	88.8	75.0-125	2.28	20.0
	Copper	MG/KG	508	498	16	490	480	90.1	90.0	75.0-125	0.111	20.0
	Lead	MG/KG	508	498	21	470	470	84.1	86.0	75.0-125	2.23	20.0
	Zinc	MG/KG	508	498	88	550	560	92.0	94.0	75.0-125	5.58	20,0

BORATORY DUPLICATE

aboratory ID: WG49640-5 Duplicate Sample: 01092691-2 Analysis Lot: WG49769 Sample Tag:

1	Analyte	Units	Measured	Replicate	RPD	Limits	Analysis Date
1							
	Arsenic	MG/KG	7.0	7.30	4.20	20.0	26-Sep-01 13:43

Page : 1 08-Nov-2001 11:11

OJECT: 01092691

TALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

BORATORY DUPLICATE

Laboratory ID: WG49640-5 Duplicate Sample: WG49769 Analysis Lot:

Analyte	Units	Measured	Replicate	RPD	Limits	Analysis Date
Cadmium	MG/KG	0.59	0.690	15.6	20.0	26-Sep-01 13:43
Chromium	MG/KG	19	22.0	14.6	20.0	26-Sep-01 13:43
Copper	MG/KG	16	16.0	0.00	20.0	26-Sep-01 13:43
Lead	MG/KG	21	24.0	13.3	20.0	26-Sep-01 13:43
Zinc	MG/KG	88	100	12.8	20.0	26-Sep-01 13:43

#### INITIAL CALIBRATION VERIFICATION

Laboratory ID: WG49769-1 Analysis Lot: WG49769 Sample Tag:

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Arsenic	UG/ML	4.00	3.8	95.0	90.0-110	26-Sep-01 09:14
	Cadmium	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01 09:14
	Chromium	UG/ML	4.00	3.9	97.5	90.0-110	26-Sep-01 09:14
	Copper	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01 09:14
	Lead	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01 09:14
•	Zinc	UG/ML	4.00	3.9	97.5	90.0-110	26-Sep-01 09:14

#### INITIAL CALIBRATION BLANK

Laboratory ID: WG49769-2 Analysis Lot: WG49769

	Analyte	Units	Value	RDL	Analysis Date
	Arsenic	PPB	0.300	0.30	26-Sep-01 09:22
	Cadmium	PPB	1.00	1.0	26-Sep-01 09:22
_	Chromium	PPB	2.00	2.0	26-Sep-01 09:22
	Copper	PPB	5.0U	5.0	26-Sep-01 09:22
	Lead	PPB	0.600	0.60	26-Sep-01 09:22
	Zinc	PPB	4.0U	4.0	26-Sep-01 09:22

#### TINUING CALIBRATION BLANK

aboratory ID: WG49769-10 Analysis Lot: WG49769

	Analyte	Units	Value	RDL	Analysis Date
-	Cadmium	UG/ML	1.00	1.0	26-Sep-01 13:58
	Chromium	UG/ML	2.0U	2.0	26-Sep-01 13:58
	Copper	UG/ML	5.0U	5.0	26-Sep-01 13:58
	Lead	UG/ML	0.600	0.60	26-Sep-01 13:58
	Zinc	UG/ML	4.0U	4.0	26-Sep-01 13:58

aboratory ID: WG49769-12 Analysis Lot: WG49769

	Analyte	Units	Value	RDL	Analysis Date
1	Arsenic Cadmium Chromium Copper	UG/ML UG/ML UG/ML UG/ML	0.30U 1.0U 2.0U 5.0U	0.30 1.0 2.0	26-Sep-01 14:59 26-Sep-01 14:59 26-Sep-01 14:59 26-Sep-01 14:59
	Lead	UG/ML	0.60U	0.60	26-Sep-01 14:59

atory ID: WG49769-6 Analysis Lot: WG49769

Analyte Units Value RDL Analysis Date

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ROJECT: 01092691

NAS ANALYSIS (SW6010) AND PREPARATION (SW3051) NTINUING CALIBRATION BLANK

Laboratory ID: WG49769-6 Analysis Lot: WG49769 Sample Tag:

	Analyte	Units	Value	RDL	Analysis Date
	Arsenic	UG/ML	0.300	0.30	26-Sep-01 12:55
	Cadmium	UG/ML	1.00	1.0	26-Sep-01 12:55
_	Chromium	UG/ML	2.00	2.0	26-Sep-01 12:55
	Copper	UG/ML	5.0U	5.0	26-Sep-01 12:55
	Lead	UG/ML	0.60U	0.60	26-Sep-01 12:55
	Zinc	UG/ML	4.0U	4.0	26-Sep-01 12:55

TERFERENCE CHECK SAMPLE - A

Laboratory ID: WG49769-3 Analysis Lot: WG49769

	Analyte	Units	Spiked	Measured	*Recovery	Limit	s Date	•
	Arsenic	UG/ML	0.0	0.0036	N/A	N/A	26-Sep-01 09:27	•
-	Cadmium	UG/ML	0.0	-0.0051	N/A	N/A	26-Sep-01 09:27	
•	Chromium	UG/ML	0.0	-0.00078	N/A	N/A	26-Sep-01 09:27	
	Copper	UG/ML	0.0	-0.0042	N/A	N/A	26-Sep-01 09:27	
	Lead	UG/ML	0.0	-0.0014	N/A	N/A	26-Sep-01 09:27	
-	Zinc	UG/ML	0.0	-0.013	N/A	N/A	26-Sep-01 09:27	

TERFERENCE CHECK SAMPLE - AB

Laboratory ID: WG49769-4 Analysis Lot: WG49769

Analyte	Units	Spiked	Measured	Recovery	Limits	Analysis Date
Arsenio	UG/ML	0.10	0.10	104	80.0-120	26-Sep-01 09:32
Cadmiun	UG/ML	1.0	0.97	97.4	80.0-120	26-Sep-01 09:32
Chromium	UG/ML	0.50	0.48	96.2	80.0-120	26-Sep-01 09:32
Copper	UG/ML	0.50	0.55	110	80.0-120	26-Sep-01 09:32
Lead	UG/ML	0.050	0.047	93.8	80.0-120	26-Sep-01 09:32
Zinc	UG/ML	1.0	0.93	93.0	80.0-120	26-Sep-01 09:32

TINUING CALIBRATION VERIFICATION

aboratory ID: WG49769-11 Analysis Lot: WG49769 Sample Tag:

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Arsenic	UG/ML	4.0	3.9	97.5	90.0-110	26-Sep-01 14:55
_	Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 14:55
	Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 14:55
	Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 14:55
	Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 14:55
	Zinc	tic/MI.	4.0	4.1	102	90.0-110	26-Sep-01 14:55

ratory ID: WG49769-5 Analysis Lot: WG49769 Sample Tag:

-	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Arsenic	UG/ML	4.0	3.8	95.0	90.0-110	26-Sep-01 12:50
	Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 12:50
	Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
	Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
<u> </u>	Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 12:50
•	Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50

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POJECT: 01092691

TALE ANALYSIS (SW6010) AND PREPARATION (SW3051)

NTINUING CALIBRATION VERIFICATION

Laboratory ID: WG49769-9 Analysis Lot: WG49769 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Arsenic	UG/ML	4.0	3.8	95.0	90.0-110	26-Sep-01 13:54
Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 13:54
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 13:54
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54

RO<u>JE</u>CT: 01092691

BY GC (SW8082)

CROSS REFERENCE REPORT

Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method S	Sample Tag
01092691-1	N-01-S-01 (P,M)	WG49741	WG49802	02-Oct-01 04:06	AG	SW8082/SW3550B	C1:D1:1
01092691-2	N-02-S-01 (P,M)	WG49741		02-Oct-01 03:29	AG	SW8082/SW3550B	C1:D1:1
01092691-2	N-02-S-01 (P,M)	WG49741	WG49802	02-Oct-01 04:06	AG	SW8082/SW3550B	C2:D1:1
01092691-3	N-02-S-02 (P,M)	WG49741	WG49802	02-Oct-01 04:42	AG	SW8082/SW3550B	C1:D1:1
01092691-3	N-02-S-02 (P,M)	WG49741	WG49802	02-Oct-01 05:19	AG	SW8082/SW3550B	C2:D1:1
01092691-4	N-03-S-01 (P,M)	WG49741	WG49802	02-Oct-01 05:19	AG	SW8082/SW3550B	C1:D1:1
01092691-4	N-03-S-01 (P,M)	WG49741	WG49802	02-Oct-01 05:56	AG	SW8082/SW3550B	C2:D1:1
01092691-5	N-04-S-01 (P,M)	WG49741	WG49802	02-Oct-01 05:56	AG	SW8082/SW3550B	C1:D1:1
01092691-5	N-04-S-01 (P,M)	WG49741	WG49802	02-Oct-01 06:33	AG	SW8082/SW3550B	C2:D1:1
01092691-6	N-05-S-01 (P,M)	WG49741	WG49802	02-Oct-01 06:33	AG	SW8082/SW3550B	C1:D1:1
01092691-6	N-05-S-01 (P,M)	WG49741	WG49802	02-Oct-01 07:09	AG	SW8082/SW3550B	C2:D1:1

THOD BLANK

oratory ID: WG49741-1 Analysis Lot: WG49802 Prep Batch: WG49741 Sample Tag: Cl:Dl:1

31	77-4 h-	Value	nn.	Barlinsia Daba
 Analyte	Units	value	RDL	Analysis Date
Aroclor 1016	UG/KG	80U	80	02-Oct-01 01:01
Aroclor 1221	UG/KG	160U	160	02-Oct-01 01:01
Aroclor 1232	UG/KG	800	80	02-Oct-01 01:01
Aroclor 1242	UG/KG	80U	80	02-Oct-01 01:01
Aroclor 1248	UG/KG	800	80	02-Oct-01 01:01
Aroclor 1254	UG/KG	160U	160	02-Oct-01 01:01
Aroclor 1260	UG/KG	1600	160	02-Oct-01 01:01

LABORATORY CONTROL SAMPLE

Laboratory ID: WG49741-2 Analysis Lot: WG49802 Sample Tag: C1:D1:1

Analyte	Units	Spiked	Measured	•	Limits	Analysis Date
Aroclor 1016 Aroclor 1260	UG/KG UG/KG	66.7 66.7	52.0 <b>6</b> 9.0	78.0	51.8-172.06 42.6-180	02-Oct-01 01:38 02-Oct-01 01:38

RIX SPIKE/MATRIX SPIKE DUPLICATE

aboratory IDs: WG49741-3, WG49741-4 Analysis Lot: WG49802 Sample Spiked: 01092691-2 Client ID: N-02-S-01 (P,M) Sample Tag: C1

	Analyte	Units		Amt MSD Spiked	Sample Value		MSD Value	 -	Rec Limits	 RPD Limits
<b>=</b>	Aroclor 1016 Aroclor 1260		66.4	66.7	80U 160U	59 80	63 79	94.5	51.8-172.06 42.6-180	 

ONTINUING CALIBRATION VERIFICATION

ratory ID: WG49802-2 Analysis Lot: WG49802 Sample Tag: C1:D1:1

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
-							
1	Aroclor 1016	UG/ML	0.75	0.70	93.0	70.0-130	02-Oct-01 07:46
	Aroclor 1260	UG/ML	0.75	0.71	94.7	70.0-130	02-Oct-01 07:46

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OJECT: 01092691

BY GC (SW8082)

NTINUING CALIBRATION VERIFICATION

Laboratory ID: WG49802-2 Analysis Lot: WG49802 Sample Tag: Cl:D1:1

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl	(Surr.)	UG/ML	0.30	0.27	91.1	70.0-130	02-Oct-01 07:46
Tetrachloro-m-xylene	(Surr.)	UG/ML	0.30	0.28	94.0	70.0-130	02-Oct-01 07:46

#### ITIAL CALIBRATION VERIFICATION

Laboratory	ID:	WG49802-1	Analysis	Lot:	WG49802	Sample Tag:	C1:D1:1

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aroclor 1016 Aroclor 1260	•	0.500	0.52		80.0-120 80.0-120	02-Oct-01 00:24 02-Oct-01 00:24
Decachlorobiphenyl (Surr.)	UG/ML	<del>-911666911</del>	<del></del>		80.0 130	
trachlore in trylene (Surr.)	UG/MI	<del>911666911</del> -	0.0	<del>0:0</del> -	<del>-80-0-120</del>	02-0ct-01-00:24*

SURROGATE RECOVERIES

aboratory ID: 0109	2691-1 Analysis	B Lot: WG49802	Client ID: N-01-	S-01 (P.M)	Sample Tag: C1:D1:1

<b>1</b>	Analyte	-	*Recovery	Limits	Analysis	
Decachlorobiphenyl Tetrachloro-m-xylene	(Surr.)		107	45.0-155 58.0-141	02-Oct-01 02-Oct-01	04:06

#### ID: 01092691-2 Analysis Lot: WG49802 Client ID: N-02-S-01 (P,M) Sample Tag: C1:D1:1

	Analyte		-		*Recovery		Analysis Date
Decachlorobiphenyl			16.6	_		45.0-155	02-Oct-01 03:29
trachloro-m-xylene	(Surr.)	UG/KG	16.6	14.0	84.3	58.0-141	02-Oct-01 03:29

Deratory ID: 01092691-3 Analysis Lot: WG49802 Client ID: N-02-S-02 (P,M) Sample Tag: Cl:Dl:1

-	Analyte				*Recovery		Analysis Date	
Decachlorobiphenyl						45.0-155	02-Oct-01 04:4	
Tetrachloro-m-xylene	(Surr.)	UG/KG	16.6	15.2	91.5	58.0-141	02-Oct-01 04:4	12

Aberatory ID: 01092691-4	Analysis Lot: WG49802	Client ID: N-03-S-01 (P.M)	Sample Tag: C1:D1:1

	Analyce				*Recovery	Limits	Analysis Date
Decachlorobiphenyl	(Surr.)	UG/KG	16.6	17.4	105	45.0-155	02-Oct-01 05:19
rachloro-m-xylene	(Surr.)	UG/KG	16.6	15.5	93.3	58.0-141	02-Oct-01 05:19

atory ID: 01092691-5 Analysis Lot: WG49802 Client ID: N-04-S-01 (P,M) Sample Tag: Cl:D1:1

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
ecachlorobiphenyl	(Surr.)	UG/KG	16.7	19.2	115	45.0-155	02-Oct-01 05:56
Tachloro-m-xvlene	(Surr.)	UG/KG	16.7	16.7	100	58.0-141	02-Oct-01 05:56

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ROJECT: 01092691

B-s BY GC (SW8082) TRROGATE RECOVERIES

Laboratory ID: 0109269	1-6 Ar	alysis Lo	t: WG49802	Client	ID: N-05-8	S-01 (P,M)	Sample Tag: C1:D1:1
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl	(Surr.)	UG/KG	16.7	19.0	114	45.0-155	02-Oct-01 06:33
Tetrachloro-m-xylene	(Surr.)	UG/KG	16.7	16.4	98.4	58.0-141	02-Oct-01 06:33
poratory ID: WG49741	-1 Ana	lysis Lot	: WG49802	Client	ID: MB Sa	.mple Tag: C	21:D1:1
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl	(Surr.)	UG/KG	16.7	19.1	115	45.0-155	02-Oct-01 01:01
etrachloro-m-xylene	(Surr.)	UG/KG	16.7	16.2	97.2	58.0-141	02-Oct-01 01:01
Laboratory ID: WG49741	-2 Ana	lysis Lot:	WG49802	Client	ID: LCS S	ample Tag:	C1:D1:1
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl	(Surr.)	UG/KG	16.7	16.7	100	45.0-155	02-Oct-01 01:38
Tetrachloro-m-xylene	(Surr.)	UG/KG	16.7	14.5	В7.О	58.0-141	02-Oct-01 01:38
oratory ID: WG49741	-3 Ana	lysis Lot:	WG49802	Client	ID: MS Sa	mple Tag: C	1:D1:1
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl	(Surr.)	UG/KG	16.6	20.4	123	45.0-155	02-Oct-01 02:15
etrachloro-m-xylene	(Surr.)	UG/KG	16.6	17.2	104	58.0-141	02-Oct-01 02:15
Laboratory ID: WG49741	4 Ana	lysis Lot:	WG49802	Client	ID: MSD S	ample Tag: (	C1:D1:1
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Decachlorobiphenyl	(Surr.)	UG/KG	16.7	20.8	125	45.0-155	02-Oct-01 02:52
Tetrachloro-m-xylene	(Surr.)	UG/KG	16.7	17.5	105	58.0-141	02-Oct-01 02:52
_							

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SHIPPING & RECEIVING

PHONE # 309-692-9688 FAX # 309-692-9689



011901 B

PAGE\_\_\_\_OF\_\_\_\_

9/21/01

CUSAIT			SI BE COMPLETE			71141)						<u> </u>
CLIENT KEYSTONE	19718.		P.O. NUMBER	PICK -	1	3	ANA	ALYSIS	REQU	ESTED		(FOR LAB USE ONLY) 2691-6
ADDRESS	PHONE NUM	IBEA I	AX NUMBER	DATE S					A		Τ	LOGIN # 010924
5070 Stone Mill Rom	812-336-	0972		9/19/	01			Ď	712			LOGGED BY:
CITY	SAMPLER (PLEASE PRIN	<b>n</b> <u>ga</u> ga a sa sa		MATRIX TY	1	700	1	ý	6			TEMPLATE:
STATE Bloomingth Jan 47408	JAD/	IZAA	gilledi.	DW-DRINKING	3 WATER	3	- {	1				
CONTACT PERSON	SAMPLER'S SIGNATURE			GW-GROUND WWSL-SLUD NAS-SOLID	GE E	1		1/2	Z		1	PROJ. MGR.:
BOB ATEN		Duwch	un	OTHER:		2	33	10	3	Ì		
2 SAMPLE DESCRIPTION	DATE	TIME	SAMPLE TYPE GRAB COMP	MATRIX TYPE	TOTAL # OF CONT	107	20	1551	200	/		REMARKS
N-01-8-01 (PM)	9/19/01	13:55	×	NAS	1	X	X					
N-02-5-01 (p, m)	9/19/01	14:00	×	NA5	2	×	×					EXTRA VOLUME FOR
N-02-S-02 (pm)	9/19/01	14:02	X	N45	/	Х	メ			_   _	-	
N-03-5-01/PM	9/19/01	14:15	×	NAS	1	X	X		_			
N-04-5-01 (pm)			×	NAS	1	X	X					
N-01-S-01 (p, m) N-02-S-01 (p, m) N-03-S-02 (p, m) N-03-S-01 (p, m) N-04-S-01 (p, m) N-05-S-01 (p, m)	9/19/01	14:35	×	UAS	1	×	×		_			
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	DRMAL	RUSH	<u> </u>									t at the lab. By initialing occeeding with analysis, if
RUSH RESULTS VIA (PLEASE CIRCLE) FA		PHONE		6	the sample	e (empe	erature w Ihe I	is outs	ide of	he range	of 0.1-6	8.0°C. By not initialing esting regardless of the
<u> </u>	RENT FROM ABOVE:	ED BY: (SIGNAT	TIBE)	<u> </u>	Sample 181	<del></del>		7	=		ACNITO:	(FOR LAB USE ONLY)
$ (\tau) $	19/01	EU OT. (SIGNA)	URIC) ,			"	DATE		в)	COM	ие <b>N</b> 15;	(FOR LAB USE UNLY)
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		\ _	; /				-190	∧/∥S	AMPLE	(S) RECE	EIVED O	
	IME	1 7	· H	_			TIME	В	OTTLE	S FILLED	WITH A	ADEQUATE VOLUME ON N THIN HOLD TIME(S)
<u> </u>		<u> </u>	· V V	`			~^^	_اب				

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# PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section.

tvery Method:	• ,	Commerical Carrier (I	-	L L	Laboratory Pick-Up
Project Earth Tec	h / Key 57	bne Coole	r/_of	4	
Received (date time) 9 Opened (If different)	<u>-19-01 18</u>	Shipp 3:20	Ву:	AKH	):
Preliminary Examinatio	n Checklist				
Did the shipping container If YES, carrier name & air (Place any shipping docum	r bill #:				YES NO NA
Were custody seals on the If YES, a: Were the custod b: Enter the Seal D	ly seals intact upon	arrival?	• • • • • • • • • • • • • • • • • • • •		YES NO* YES NO*
Was the Chain of Custody If YES, a: Was the COC fu b: COC #:	illy executed in ink	by the shipper?	-		VES NO*
c: Was the project	identifiable from this determined?	he COC?			YES NO*
Were samples received with (Processed Water/Vinder) Did the cooler contain Ice?	hin criteria of 2-6° Wastewater are exc	Deg C?luded from the ter	nperature criteria)		YES NO*
Sample Examination & C	heck-In Checklist				
Were samples packaged in	conformance to ge	nerally accepted p	ractices?	***************************************	MES NO*
Did all sample containers a Did all sample containers h If sample container	ave secure and con	npleted labels?	*************************		YES NO*
Were caps of individual bot Did all labels and/or tags ag	ttles/vials free from	tape and/or custo	dy seals?		VES NO*
Were QC samples included	?				YES NO
Did pH checks confirm indi Did volumes, containers, & Were VOA vials (waters) fr	preservatives seem	appropriate to in	dicate tests?	•••••	YES NO NA VES NO* YES NO* NA
If any NO*, Proceed with L	ogin (YES / NO)	Project Manager:	<u></u>	Date:	
Deis/Comments:					

## Appendix G Tail Tracks Landfill Groundwater Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092694

November 2, 2001

Earth Tech

Project: Tail Tracks/Waters

SDG #01092694

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## TABLE OF CONTENTS SDG #01092694

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Dates and Dilutions	07
QC Summary	09
Shipping and Receiving	12

**CASE NARRATIVE** 



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

## CASE NARRATIVE - Earth Tech/Keystone

Tail Tacks - Waters Project No. 19718.09

PDC Laboratories, Inc. received 8 water samples on September 19, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092694 for total metals.

Sample Id's		Date		
Field	Lab	Collected	Received	
T-TL-1-G-01 (M)	01092694-1	09/19/01	09/19/01	
T-TL-2-G-01 (M)	01092694-2	09/19/01	09/19/01	
T-TL-3-G-01 (M)	01092694-3	09/19/01	09/19/01	
T-TL-3-G-02 (M)	01092694-4	09/19/01	09/19/01	
T-TL-4-G-01 (M)	01092694-5	09/19/01	09/19/01	
TW-7-G-01 (M)	01092694-6	09/19/01	09/19/01	
TFB-G-01 (M)	01092694-7	09/19/01 09/19/01		
TRB-S-01 (M)	3-S-01 (M) 01092694-8		09/19/01	

## **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by Method 200.8.

## **Metals QC Summary**

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met QC acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092694-3. All recoveries were within the specified QC limits.



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

All Interference Check Samples were within QC acceptance criteria.

## Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Barmarn Beard	Name:	Barbara Beard
Date:	November 2, 2001	Title:	Project Manager

EAR01092694.DOC



# PDC Laboratories, Inc. DATA QUALIFIERS

F	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
E	present in the method blank at
C	The batch control sample failed to meet the required acceptance criteria.
Ε	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
Κ	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
М	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
s	Surrogate compound diluted below a reliable quantitation level.
T	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
٧	Verification standard recovery failed to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
NR	Not requested.
X	Miscellaneous; see comments.

PDC Laboratories, Inc.



TABULATED RESULTS



		ry Sample No.: nt Description:	01092694-1 20576	01092694-2 20576	01092694-3 10/ <del>2</del> 3 <del>/Q</del> 1	
	0.110	Site/Locator:	T-TL-1-G-01 (M)	T-TL-2-G-01 (M)	10/23/961 T-TL-3-G-01 (M) 19-SEP-01 15:25:00 undituted  0.005 U 0.0066 J 0.0088 0.0064	
Method	Parameter	Date Collected:	19-SEP-01 15:10:00 undiluted	19-SEP-01 15:17:00 undiluted	T-TL-3-G-01 (M) 19-SEP-01 15:25:00 undiluted  0.005 U 0.0066 J	
EPA 200.8	Cadmium	mg/l	0.005 U	0.005 U	0.005 U	
PA 200.8	Chromium	mg/l	0.0056 J	0.0082 J	0.0066 J	
PA 200.8	Lead	mg/l	0.00064 J	0.021	0.0088	
EPA 200.8	Nickel	mg/l	0.0092	0.011	0.0064	
PA 200.8	Zinc	mg/l	0.012 J	0.1	0.025	

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State of Illinois Chemical Analysis in <a href="Drinking">Drinking</a> Water Certified Lab. No. 100230

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		ry Sample No.: nt Description:	01092694-4 20576	01092694-5 20576	01092694-6 10/203/61 TW-7-G-01 (M) 19-SEP-01 14:55:00 undiluted 0.005 U 0.0029 J 0.0005 J		
	.•	Site/Locator:	T-TL-3-G-02 (M) 19-SEP-01 15:25:00	T-TL-4-G-01 (M) 19-SEP-01 15:35:00			
Method	Parameter	Date Collected:	undiluted	undiluted	TW-7-G-01 (M) 19-SEP-01 14:55:00 undiluted  0.005 U 0.0029 J		
EPA 200.8	Cadmium	mg/l	0.005 U	0.005 U	0.005 U		
PA 200.8	Chromium	mg/l	0.0068 J	0.0095.J	0.0029 J		
PA 200.8	Lead	mg/l	0.0078	0.2	0.0005 J		
EPA 200.8	Nickel	mg/l	0.0049 J	0.012	0.0074		
PA 200.8	Zinc	mg/i	0.049	0.15	0.0054 J		

		Laboratory Sample No.: Client Description: Site/Locator:		01092694-8 20576 TRB-S-01 (M)
Method	Parameter	Date Collected:	19-SEP-01 07:40:00 undiluted	19-SEP-01 07:40:00 undiluted
EPA 200.8	Cadmium	mg/i	0.005 U	0.005 U
PA 200.8	Chromium	mg/l	0.00057 J	0.0002 J
EPA 200.8	Lead	mg/l	0.003 Ŭ	0.003 U
EPA 200.8	Nickel	mg/l	0.005 U	0.005 U
A 200.8	Zinc	mg/i	0.0045 J	0.0024 J

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10/23/01

DATES & DILUTIONS REPORT

Factor Measure Dat Hold Date Batch ID Assoc.Code Factor Analysis Dat Date ab:ID: 01092694:1 Client ID T-TL-1-G-01.(M) Collect Date: 09/19/01:15:10 Receive Date Date Date Date Date Date Date Dat	3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239
TED CD, 200.8 09/24/01 16:00 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:09 03 FED CR, 200.8 09/24/01 16:00 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:09 03 FED NI, 200.8 09/24/01 16:00 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:09 03 FED PB, 200.8 09/24/01 16:00 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:09 03 FED ZN, 200.8 09/24/01 16:00 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:09 03	3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239
FED CR, 200.8       09/24/01 16:00       03/18/02 15:10       WG50195       PREP FOR       1       09/26/01 13:09       03	3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 te:: 09/19/01 18:20
PED NI, 200.8 09/24/01 16:00 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:09 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:00 WG50195	3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 te:: 09/19/01 18:20
PED PB, 200.8       09/24/01 16:00       03/18/02 15:10       WG50195       PREP FOR       1       09/26/01 13:09       03         FED ZN, 200.8       09/24/01 16:00       03/18/02 15:10       WG50195       PREP FOR       1       09/26/01 13:09       03	3/18/02 15:10 WG50239 3/18/02 15:10 WG50239 te:: 09/19/01/18:20
FED ZN, 200.8 09/24/01 16:00 03/18/02 15:10 WG50195 PREP FOR 1 09/26/01 13:09 03	3/18/02 15:10 WG50239 te:://09/19/01/18:20
	te: 7:09/19/01/18:20
ib ID: 01092694-2 Client ID: 1-TL-2-G-01 (M) Collect Date: 09/19/01 15:17 Receive Dat	
	/18/02 15:17 WG50239
FED CD, 200.8 09/24/01 16:00 03/18/02 15:17 WG50195 PREP FOR 1 09/26/01 13:14 03	
ED CR, 200.8 09/24/01 16:00 03/18/02 15:17 WG50195 PREP FOR 1 09/26/01 13:14 03.	/18/02 15:17 WG50239
D NI, 200.8 09/24/01 16:00 03/18/02 15:17 WG50195 PREP FOR 1 09/26/01 13:14 03	/18/02 15:17 WG50239
FED PB, 200.8 09/24/01 16:00 03/18/02 15:17 WG50195 PREP FOR 1 09/26/01 13:14 03/	/18/02 15:17 WG50239
ED ZN, 200.8 09/24/01 16:00 03/18/02 15:17 WG50195 PREP FOR 1 09/26/01 13:14 03/	/18/02 15:17 WG50239
6 ID: 01092694-3 Client ID T-TL-3-G-01 (M) Collect Date: 09/19/01:15:25 Receive Date	e: 09/19/01 18:20
FED CD, 200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:41 03/	/18/02 15:25 WG50239
D CR, 200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:41 03/	/18/02 15:25 WG50239
D NI, 200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:41 03/	/18/02 15:25 WG50239
FED PB, 200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:41 03/	/18/02 15:25 WG50239
	18/02 15:25 WG50239
Client ID T-TL-3-G-02 (M) Collect Date: .09/19/01 15:25 Receive Date	9: 09/19/01/18:20
FED CD, 200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:19 03/	18/02 15:25 WG50239
200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:19 03/	18/02 15:25 WG50239
. ED NI, 200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:19 03/	18/02 15:25 WG50239
FED PB, 200.8 09/24/01 16:00 03/18/02 15:25 WG50195 PREP FOR 1 09/26/01 13:19 03/	18/02 15:25 WG50239
	18/02 15:25 WG50239
Lab ID: 01092694-5 Client ID T-TL-4-G-01 (M) Collect Date: 09/19/01 15:35 Receive Date	. 09/19/01 18:20
FED CD, 200.8 09/24/01 16:00 03/18/02 15:35 WG50195 PREP FOR 1 09/26/01 13:25 03/1	18/02 15:35 WG50239
FD CR, 200.8 09/24/01 16:00 03/18/02 15:35 WG50195 PREP FOR 1 09/26/01 13:25 03/1	18/02 15:35 WG50239
FED NI, 200.8 09/24/01 16:00 03/18/02 15:35 WG50195 PREP FOR 1 09/26/01 13:25 03/1	18/02 15:35 WG50239
PB, 200.8 09/24/01 16:00 03/18/02 15:35 WG50195 PREP FOR 1 09/26/01 13:25 03/1	18/02 15:35 WG50239
	18/02 15:35 WG50239
Lab ID: 01092694-6 Client ID TW-7-G-01 (M) Collect Date: 09/19/01 14:55 Receive Date:	09/19/01 18:20
DCD, 200.8 09/24/01 16:00 03/18/02 14:55 WG50195 PREP FOR 1 09/26/01 13:30 03/1	18/02 14:55 WG50239
CR, 200.8 09/24/01 16:00 03/18/02 14:55 WG50195 PREP FOR 1 09/26/01 13:30 03/1	18/02 14:55 WG50239
FED NI, 200.8 09/24/01 16:00 03/18/02 14:55 WG50195 PREP FOR 1 09/26/01 13:30 03/1	18/02 14:55 WG50239
PB, 200.8 09/24/01 16:00 03/18/02 14:55 WG50195 PREP FOR 1 09/26/01 13:30 03/1	8/02 14:55 WG50239
ZN, 200.8 09/24/01 16:00 03/18/02 14:55 WG50195 PREP FOR 1 09/26/01 13:30 03/1	8/02 14:55 WG50239
ab ID: 01092694-7 Client ID TFB-G-01 (M) Collect Date: 09/19/01 07:40 Receive Date:	09/19/01 18:20
CD, 200.8 09/24/01 16:00 03/18/02 07:40 WG50195 PREP FOR 1 09/26/01 13:35 03/1	8/02 07:40 WG50239
	8/02 07:40 WG50239
	8/02 07:40 WG50239
PB, 200.8 09/24/01 16:00 03/18/02 07:40 WG50195 PREP FOR 1 09/26/01 13:35 03/1	8/02 07:40 WG50239
FED ZN-200.8 09/24/01 16:00 03/18/02 07:40 WG50195 PREP FOR 1 09/26/01 13:35 03/1	8/02 07:40 WG50239

ab ID: 01092694-	8 Client ID	TRB-S-01 (M)		ollect Date: 09/	19/01 07	40 Receive	Date: 09/19/01.18:20
FED CD, 200.8	09/24/01 16:00	03/18/02 07:40		PREP FOR	1	09/26/01 14:07	03/18/02 07:40 WG50239
FED CR, 200.8	09/24/01 16:00	03/18/02 07:40	WG50195	PREP FOR	1,	09/26/01 14:07	03/18/02 07:40 WG50239
ED NI, 200.8	09/24/01 16:00	03/18/02 07:40	WG50195	PREP FOR	1	09/26/01 14:07	03/18/02 07:40 WG50239
PED PB, 200.8	09/24/01 16:00	03/18/02 07:40	WG50195	PREP FOR	1	09/26/01 14:07	03/18/02 07:40 WG50239
FED ZN, 200.8	09/24/01 16:00	03/18/02 07:40	WG50195	PREP FOR	1	09/26/01 14:07	03/18/02 07:40 WG50239

**QC SUMMARY** 

ROJECT: 01092694

ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

CROSS REFERENCE REPORT

<b>.</b>	Lab ID	Client I	D Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092694-1	T-TL-1-G-01 (M)	WG50195	WG50239	26-Sep-01 13:09	JTM	EPA 200.8
1	01092694-2	T-TL-2-G-01 (M)	WG50195	WG50239	26-Sep-01 13:14	JTM	EPA 200.8
	01092694-3	T-TL-3-G-01 (M)	WG50195	WG50239	26-Sep-01 13:41	JTM	EPA 200.8
,	01092694-4	T-TL-3-G-02 (M)	WG50195	WG50239	26-Sep-01 13:19	JTM	EPA 200.8
	01092694-5	T-TL-4-G-01 (M)	WG50195	WG50239	26-Sep-01 13:25	JTM	EPA 200.8
	01092694-6	TW-7-G-01 (M)	WG50195	WG50239	26-Sep-01 13:30	JTM	EPA 200.8
	01092694-7	TFB-G-01 (M)	WG50195	WG50239	26-Sep-01 13:35	JTM	EPA 200.8
	01092694-8	TRB-S-01 (M)	WG50195	WG50239	26-Sep-01 14:07	JTM	EPA 200.8

#### METHOD BLANK

Laboratory ID: WG50195-1 Analysis Lot: WG50239 Sample Tag: WG50195

Analyte	Units	Value	RDL	Analysis Date
Chromium	MG/L	0.010U	0.010	26-Sep-01 13:03
Nickel	MG/L	0.00500	0.0050	26-Sep-01 13:03
Zinc	MG/L	0.0042J	0.020	26-Sep-01 13:03
Cadmium	MG/L	0.00500	0.0050	26-Sep-01 13:03
ī.ead	MG/I.	0.00300	0.0030	26-Sep-01 13:03

#### LABORATORY CONTROL SAMPLE

oratory ID: WG50195-2 Analysis Lot: WG50239 Sample Tag:

Anal	yte Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chrom	ium MG/L	5.55	5.60	101	85.0-115	26-Sep-01 14:12
Nic	kel MG/L	5.55	5.40	97.3	85.0-115	26-Sep-01 14:12
z	inc MG/L	5.55	5.60	101	85.0-115	26-Sep-01 14:12
Càdm	ium MG/L	5.55	5.40	97.3	85.0-115	26-Sep-01 14:12
L	ead MG/L	5.55	5.60	101	85.0-115	26-Sep-01 14:12

### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

oratory IDs: WG50195-3, WG50195-4 Analysis Lot: WG50239 Sample Spiked: 01092694-3 Site: T-TL-3-G-01 (M) Sample Tag:

Analyt	e Units		Spiked	•	MS Value	Value	MS % Rec	MSD % Rec	Limits	RPD	Limits
Chromiu	m MG/L	5.5	5.5	0.0066	5.6	5.6	95.5	95.5	70.0-130	0.00	20.0
Nicke	1 MG/L	5.5	5.5	0.0064	5.3	5.4	90.3	92.1	70.0-130	1.97	20.0
Zin	c MG/L	5.5	5.5	0.025	5.6	5.7	80.6	82.4	70.0-130	2.21	20.0
Cadmiu	n MG/L	5.5	5.5	0.0050U	5.4	5.4	97.3	97.3	70.0-130	0.00	20.0
Lea	d MG/L	5.5	5.5	0.0088	5.6	5.7	93.8	95.6	70.0-130	1.90	20.0

#### CONTINUING CALIBRATION BLANK

Analysis Lot: WG50239-10 Analysis Lot: WG50239

2	Analyte		Value	RDL	Analysis Date
	Chromium	MG/L	0.0100	0.010	26-Sep-01 14:24
•	Nickel	MG/L	0.00500	0.0050	26-Sep-01 14:24

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OJECT: 01092694

.ALS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

NTINUING CALIBRATION BLANK

Laboratory ID: WG50239-10, WG50195-4 Analysis Lot: WG50239 Sample Tag: 01092694-3 T-TL-3-G-01 (M) Sample Tag:

Analyte Units Value RDL Analysis Date
Analyte Units Spiked Spiked Value Value Value % Rec % Rec Limits RPD Limits

Zinc MG/L 0.00017J 0.020 26-Sep-01 14:24

Zinc MG/L 0.00017J 0.020 26-Sep-01 14:24 Cadmium MG/L 0.0050U 0.0050 26-Sep-01 14:24 Lead MG/L 0.0030U 0.0030 26-Sep-01 14:24

Laboratory ID: WG50239-2 Analysis Lot: WG50239

Analyte Units Value RDL Analysis Date

Chromium MG/L 0.010U 0.010 26-Sep-01 11:11

Nickel MG/L 0.0050U 0.0050 26-Sep-01 11:11

Zinc MG/L -5.2e-05J 0.020 26-Sep-01 11:11

Cadmium MG/L 0.0050U 0.0050 26-Sep-01 11:11

Lead MG/L 0.0030U 0.0030 26-Sep-01 11:11

Laboratory ID: WG50239-6 Analysis Lot: WG50239

Analyte Units Value RDL Analysis Date

Chromium MG/L 0.010U 0.010 26-Sep-01 12:55

Nickel MG/L 0.0050U 0.0050 26-Sep-01 12:55

Zinc MG/L 0.0020J 0.020 26-Sep-01 12:55

Cadmium MG/L 0.0050U 0.0050 26-Sep-01 12:55

Lead MG/L 0.0030U 0.0030 26-Sep-01 12:55

boratory ID: WG50239-8 Analysis Lot: WG50239

Analyte Units Value RDL Analysis Date

Chromium MG/L 0.010U 0.010 26-Sep-01 14:03

Nickel MG/L 0.0050U 0.0050 26-Sep-01 14:03

Zinc MG/L 0.0020J 0.020 26-Sep-01 14:03

Cadmium MG/L 0.0050U 0.0050 26-Sep-01 14:03

Lead MG/L 0.0030U 0.0030 26-Sep-01 14:03

ERFERENCE CHECK SAMPLE - A

aboratory ID: WG50239-3 Analysis Lot: WG50239

Analyte Units Spiked Measured %Recovery Limits Date

Chromium MG/L 0.0 0.00076 N/A N/A 26-Sep-01 11:41

Nickel MG/L 0.0 0.0023 N/A N/A 26-Sep-01 11:41

Zinc MG/L 0.0 0.0036 N/A N/A 26-Sep-01 11:41

Cadmium MG/L 0.0 -6.9e-05 N/A N/A 26-Sep-01 11:41

Lead MG/L 0.0 0.00029 N/A N/A 26-Sep-01 11:41

MERFERENCE CHECK SAMPLE - AB

aboratory ID: WG50239-4 Analysis Lot: WG50239

Analyte Units Spiked Measured Recovery Limits Analysis Date

| Chromium MG/L 0.050 0.052 104 80.0-120 26-Sep-01 11:47 |
| Nickel MG/L 0.10 0.10 99.6 80.0-120 26-Sep-01 11:47 |
| Zinc MG/L 0.10 0.10 99.6 80.0-120 26-Sep-01 11:47 |
| Cadmium MG/L 0.10 0.097 97.5 80.0-120 26-Sep-01 11:47 |
| Lead MG/L 0.0050 0.0056 112 80.0-120 26-Sep-01 11:47 |
| Lead MG/L 0.0050 0.0056 112 80.0-120 26-Sep-01 11:47 |
| Cadmium MG/L 0.0050 0.0056 112 80.0-120 26-Sep-01 11:47 |
| Cadmium MG/L 0.0050 0.0056 112 80.0-120 26-Sep-01 11:47 |
| Cadmium MG/L 0.0050 0.0056 112 80.0-120 26-Sep-01 11:47 |
| Cadmium MG/L 0.0050 0.0056 112 80.0-120 26-Sep-01 11:47 |
| Cadmium MG/L 0.0050 0.0056 112 80.0-120 26-Sep-01 11:47 |

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RPD

OJECT: 01092694

AALS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

NTINUING CALIBRATION VERIFICATION

#### CANTINUING CALIBRATION VERIFICATION

Laboratory	ID:	WG50239-1	Analvsis	Lot:	WG50239	Sample Tag:
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Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 11:06
Nickel	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 11:06
Zinc	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 11:06
Cadmium	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 11:06
Lead	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 11:06

## Laboratory ID: WG50239-5 Analysis Lot: WG50239 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 12:50
Nickel	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 12:50
Zinc	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 12:50
Cadmium	MG/L	0.025	0.024	96.0	90.0-110	26-Sep-01 12:50
Lead	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 12:50

#### aboratory ID: WG50239-7 Analysis Lot: WG50239 Sample Tag:

1	Ana	lyte Uni	ts Spiked	l Measured	i %Recovery	Limits	Analysis Date
	Chro	mium MG	/L 0.025	0.026	104	90.0-110	26-Sep-01 13:58
	Ni	ckel MG	/L 0.025	0.026	104	90.0-110	26-Sep-01 13:58
		Zinc MG	/L 0.025	0.026	104	90.0-110	26-Sep-01 13:58
4	Cad	mium MG	/L 0.025	0.025	100	90.0-110	26-Sep-01 13:58
		Lead MG	/L 0.025	0.026	104	90.0-110	26-Sep-01 13:58

# aboratory ID: WG50239-9 Analysis Lot: WG50239 Sample Tag:

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Chromium	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 14:20
_	Nickel	MG/L	0.025	0.025	100	90.0-110	26-Sep-01 14:20
	Zinc	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 14:20
	Cadmium	MG/L	0.025	0.024	96.0	90.0-110	26-Sep-01 14:20
-	Lead	MG/L	0.025	0.026	104	90.0-110	26-Sep-01 14:20

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SHIPPING & RECEIVING

# PDC Laboratories, Inc. - Federal Services

SAMPLE RECEIPT FORM All No responses are to be described in the Details/Comments Section. Commerical Carrier (UPS, FEDEX, etc.) livery Method: Laboratory Pick-Un Cooler of Cooler (PDC/Other): By: ARH Received (date time) Opened (If different) Preliminary Examination Checklist Did the shipping container arrive with an air bill/shipping slip? YES NO (NA If YES, carrier name & air bill #: \_ (Place any shipping documentation in file folder) Were custody seals on the outside of the shipping container?.... If YES, a: Were the custody seals intact upon arrival?..... b: Enter the Seal Date and Name (enter "NA" if not available): 9-/9-01 Was the Chain of Custody (COC) documentation provided with the shipment?..... NO\* If YES, a: Was the COC fully executed in ink by the shipper?..... NO\* ь: coc #: 201 c: Was the project identifiable from the COC?..... \*ON C If No, how was this determined? d: Was the COC properly signed as received by the Laboratory..... NO\* t was the temperature in the Cooler? 5 ° Deg C. Were samples received within criteria of 2-6° Deg C? (Processed Water/Wastewater are excluded from the temperature criteria) Did the cooler contain Ice?.... Sample Examination & Check-In Checklist (YE'S NO\* Were samples packaged in conformance to generally accepted practices?..... Did all sample containers arrive intact and sealed?..... NO\* Did all sample containers have secure and completed labels?.... If sample containers possessed tags, circle: Tags only Tags + Labels Were caps of individual bottles/vials free from tape and/or custody seals?..... Did all labels and/or tags agree with COC?..... Were QC samples included?.... Did pH checks confirm indicated preservations? (if applicable)..... Did volumes, containers, & preservatives seem appropriate to indicate tests?..... YES NO\* Were VOA vials (waters) free from bubbles? (if applicable)..... If any NO\*, Proceed with Login (YES / NO) Project Manager:\_\_\_\_\_ Date:\_\_\_\_\_

is/Comments:

# 2231 WEST ALTORFER DRIVE PEORIA, 61615

PHONE # 309-692-9688 FAX # 309-692-9689



# CHAIN OF CUSTODY HECORD

0201

	ALL SHADED AREA					HINI						
1 KEYSTONE	19718.09	P.O. NUMBE	ER	MEANS S		3	) ANA	LYSIS	REQUI	ESTED		(FOR LAB USE ONLY) 01092694-8
ADDRESS	PHONE NUMBER	FAX NUMBE	R	DATE SI	IIPPED		1	<u> </u>		1	1	LOGIN # 01092695-7
5010 STONE MI, 11 Rd	812-336-0972			9/19,	101	- 6		18				LOGGED BY:
CITY	SAMPLER (PLEASE PRINT)			MATRIX TY		1/2	3/	7	+			LAB PROJ. #
STATE BloomINGTON, IN 47408	JAD/ R	2AA		DW-DRINKING	G WATER	1	0	(1)			1	PROJ. MGR.:
CONTACT PERSON BOB ATEN	SAMPLER'S SIGNATURE	(of		NAS-SOLID		1	177	Mc				
	DATE TIM	F SAMPLE	TYPE	MATRIX	TOTAL #	N	10	2			1	<u> </u>
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7-76-1-6-01(m) 2694-1	9/19/01 15:1	0 X		GW	1	X						
7-71-2-6-01 (m) -2	9/19/01 15:1	7 ×		5W	/	X						
T-TL-3-6-01/11) -3	7/1/01 15:2	5 X	 	6W	2	×						Fa MS/MSD
T-TC-3-6-02(11-) -4	9/13/01 15:0	25 X		EW	1.	X						
7-7-46-01 pm -5	7/13/01 /53	'5 x.		4w	1	X						
TW-7-6-01 pm -4	7/17/01/14:	55 K		GW	/	X				-   .		
TFR-6-01 (11) -7	7/19/01 07	10 X		GW	1	X			\			
TRB-5-01 (a) -8	3/19/01/02	10 X		1.072	/	×						
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T-02-5-01 (m)	3/19/01 10:	50 X		NAS	/	×						<u> </u>
T-03-5-01 (m)	9/19/01/10:	- 1	<u></u>	NAS	/ ·	×						
T-04-5-01 (m)	7/19/01/10:	20 X		NAS	1	<u> </u>	<u>L</u>					
( 5 ) (BUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SOCHARGE)	ORMAL PHE	<b>3</b> 91		6								ot at the lab. By initialing oceeding with analysis, if
	AX PHI	ONE			the sampl	e temp	erature	is outs	ide of	the range	r.of 0.1-	6.0°C. By not initialing esting regardless of the
	ERENT FROM ABOVE:			_1	sample te						.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	DATE RECEIVED BY:	SIGNATURE)			<del></del>	1	DATE		8	COM	MENTS	(FOR LAB USE ONLY)
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<b>∄</b> \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\		$\bigcirc$	1	4 , .			9-19	ഹ/ s	AMPL	E(S) REC	EIVED (	ONICE OPIN
	TIME (	. K.a	1	<del>.</del>	-		TIME		OTTLE	S FILLE	HTIW,C	GOOD CONDITION OR N ADEQUATE VOLUME OR N ITHIN HOLD TIME(S) OR N
		<u> </u>		$\times$								

# Appendix H Tail Tracks Landfill Soil Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092695

November 7, 2001

Earth Tech

Project: Tail Tracks/Soils

SDG #01092695

TABLE OF CONTENTS

# TABLE OF CONTENTS SDG #01092695

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QC Summary	
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**CASE NARRATIVE** 



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

# CASE NARRATIVE – Earth Tech/Keystone

Tail Tacks - Soils Project No. 19718.09

PDC Laboratories, Inc. received 7 soil samples on September 19, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092695 for total metals.

Sampl	le Id's	D	te		
Field	Lab	Collected	Received		
T-01-S-01 (M)	01092695-1	09/19/01	09/19/01		
T-02-S-01 (M)	01092695-2	09/19/01	09/19/01		
T-03-S-01 (M)	01092695-3	09/19/01	09/19/01		
T-04-S-01 (M)	01092695-4	09/19/01	09/19/01		
T-05-S-01 (M)	01092695-5	09/19/01	09/19/01		
T-05-S-02 (M)	01092695-6	09/19/01	09/19/01		
T-06-S-02 (M)	01092695-7	09/19/01	09/19/01		

# **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by SW-846 6010.

# Metals QC Summary

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met QC acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092695-5. All recoveries were within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

EAR01092695.DOC



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

A Sample Duplicate was performed on sample 01082695-5. All recoveries were within QC criteria. All Interference Check Samples were within QC criteria.

# Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Barkara Beard	Name:	Barbara Beard	
Date:	November 7, 2001	Title:	Project Manager	

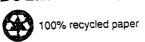
EAR01092695.DOC



# PDC Laboratories, Inc. DATA QUALIFIERS

A	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
C	The batch control sample failed to meet the required acceptance criteria.
E	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
K	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
s	Surrogate compound diluted below a reliable quantitation level.
Τ	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery failed to meet the required acceptance criteria.
	Surrogate recovery falled to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
NR	Not requested.
X	Miscellaneous; see comments.

PDC Laboratories, Inc.



TABULATED RESULTS



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689



Method	Laboratory Sample No Client Description Site/Locator Date Collected Method Parameter		01092695-1 205746 T-01-S-01 (M) 19-SEP-01 11:00:00 undiluted	01092695-2 205746 T-02-S-01 (M) 19-SEP-01 10:50:00 undiluted	01092695-3 11/203/04 T-03-S-01 (M) 19-SEP-01 10:30:00 undiluted	
SW6010B	Cadmium	mg/kg	1.8	1.6	0.8 J	
W6010B	Chromium	mg/kg	29	46	22	
SW6010B	Lead	mg/kg	150	90	55	
V6010B	Nickel	mg/kg	18	18	20	
V6010B	Zinc	mg/kg	450	380	120	
SW6010B	Cadmium	mg/kg Dry	2.6	2	0.99 J	
V6010B	Chromium	mg/kg Dry	43	58	27	
SvV6010B	Lead	mg/kg Dry	220	110	68	
SW6010B	Nickei	mg/kg Dry	26	22	25	
V6010B	Zinc	mg/kg Dry	660	480	150	
SM2540B	Moisture	%	32	20	19	

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State of Illinois Chemical Analysis in Drinking Water Certified Lab. No. 100230

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Client		ry Sample No.: nt Description: Site/Locator: Date Collected:	01092695-4 205746 T-04-S-01 (M) 19-SEP-01 10:20:00 undiluted	01092695-5 2057 <b>4</b> 6 T-05-S-01 (M) 19-SEP-01 09:55:00 undiluted	01092695-6 11½3¼2f T-05-S-02 (M) 19-SEP-01 10:00:00 undiluted
SW6010B	Cadmium	mg/kg	4.7	3	2
W6010B	Chromium	mg/kg	42	31	24.
SW6010B	Lead	mg/kg	560	160	98
W6010B	Nickel	mg/kg	17	24	21
W6010B	Zinc	mg/kg	1,300	600	350
SW6010B	Cadmium	mg/kg Dry	6.6	4.5	3.1
W6010B	Chromium	mg/kg Dry	59	47	38
<b>9</b> W6010B	Lead	mg/kg Dry	790	240	150
SW6010B	Nickel	mg/kg Dry	24	36	33
W6010B	Zinc	mg/kg Dry	1,800	910	550
SM2540B	Moisture	%	29	34	36

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Laboratory Sample No.:

Client Description: Site/Locator:

Date Collected:

01092695-7

205746

T-06-S-02 (M) 19-SEP-01 09:45:00 11/07/01

Method	Parameter		undiluted	
SW6010B	Cadmium	mg/kg	14	
W6010B	Chromium	mg/kg	190	
SW6010B	Lead	mg/kg	600	
W6010B	Nickel	mg/kg	83	
W6010B	Zinc	mg/kg	3,700	
SW6010B	Cadmium	mg/kg Dry	16	
W6010B	Chromium	mg/kg Dry	220	
W6010B	Lead	mg/kg Dry	690	
SW6010B	Nickel	mg/kg Dry	95	
W6010B	Zinc	mg/kg Dry	4,200	
SM2540B	Moisture	%	13	

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Field	Lab	Collected	Received		
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T-02-S-01 (M)	01092695-2	09/19/01	09/19/01		
T-03-S-01 (M)	01092695-3	09/19/01	09/19/01		
T-04-S-01 (M)	01092695-4	09/19/01	09/19/01		
T-05-S-01 (M)	01092695-5	09/19/01	09/19/01		
T-05-S-02 (M)	01092695-6	09/19/01	09/19/01		
T-06-S-02 (M)	01092695-7	09/19/01	09/19/01		

# **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by SW-846 6010.

# Metals QC Summary

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A Sample Duplicate was performed on sample 01082695-5. All recoveries were within QC criteria. All Interference Check Samples were within QC criteria.

# Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Name:	Barbara Beard
Date:	Title:	Project Manager

EAR01092695.DOC



DATES & DILUTIONS REPORT

10-26-01 12:20		PD	C Laboratories, In	c.				Page	1
	Dil. Factor	Measure Dat	Hold Date	Batch ID	Assoc.Code	Dil. Factor	Analysis Dat	Analyis Hold Date	Analysis Batch
ab ID 0109269	95-1	Client I	D.T-01-S-01 (M)	in and the C	collect Date: 09	719/01 11:0	0 - Recei	/e Date: -: 09/19	7/01-18:20
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ED CR, 6010		09/25/01 14:00 09/25/01 14:00				1	09/26/01 14:34		:00 WG50762
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FED PB, 6010		09/25/01 14:00			PREP FOR	1	09/26/01 14:34		00 WG50762
ED ZN, 6010		09/25/01 14:00	03/18/02 11:00		PREP FOR	1	09/26/01 14:34		00 WG50762
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D OD SALE				14/050704		1	09/21/01 09:33		50 WG49494
D CD, 6010		09/25/01 14:00	03/18/02 10:50		PREP FOR	1	09/26/01 14:39		50 WG50762
FED CR, 6010		09/25/01 14:00	03/18/02 10:50		PREP FOR	1	09/26/01 14:39		50 WG50762
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D PB, 6010		09/25/01 14:00	03/18/02 10:50		PREP FOR	1	09/26/01 14:39		50 WG50762
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NI, 6010		09/25/01 14:00	03/18/02 10:30	WG50761	PREP FOR	1	09/26/01 14:44	03/18/02 10:3	
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FED CR, 6010		09/25/01 14:00	03/18/02 10:20	WG50761	PREP FOR	1	09/26/01 14:49	03/18/02 10:2	0 WG50762
FED NI, 6010		09/25/01 14:00		WG50761	PREP FOR	1	09/26/01 14:49	03/18/02 10:2	0 WG50762
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FED CR, 6010		09/25/01 14:00	03/18/02 09:55	WG50761	PREP FOR	1	09/26/01 15:59	03/18/02 09:5	5 WG50762
F NI, 6010		09/25/01 14:00	03/18/02 09:55		PREP FOR	1	09/26/01 15:59	03/18/02 09:5	5 WG50762
FED PB, 6010		09/25/01 14:00	03/18/02 09:55		PREP FOR	1	09/26/01 15:59	03/18/02 09:55	5 WG50762
F ZN, 6010		09/25/01 14:00	03/18/02 09:55		PREP FOR		09/26/01 15:59	03/18/02 09:55	
L 1D 01092695	-6	Client ID.	T-05-S-02 (M)	Col	lect Date: 09/1	9/01:10:00	Receive	Date: 09/19/0	1.18:20
FED MOIST						1 (	09/21/01 09:33	03/18/02 10:00	WG49494
F CD, 6010		09/25/01 14:00	03/18/02 10:00	WG50761	PREP FOR	1 (	09/26/01 15:32	03/18/02 10:00	WG50762

CR, 6010

PB, 6010

FED NI, 6010

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PREP FOR

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09/26/01 15:32 03/18/02 10:00 WG50762

09/26/01 15:32 03/18/02 10:00 WG50762

09/26/01 15:32 03/18/02 10:00 WG50762

ab ID: 01092695-	7	ा-06-S-02 (M)	, Co	ollect Date:∈09/	19/01 09	9:45 Receive	Date: 09/19/01 18:20
TED MOIST					1	09/21/01 09:33	03/18/02 09:45 WG49494
FED CD, 6010	09/25/01 14:00	03/18/02 09:45	WG50761	PREP FOR	1	09/26/01 15:47	03/18/02 09:45 WG50762
FED CD, 6010 ED CR, 6010	09/25/01 14:00	03/18/02 09:45	WG50761	PREP FOR	1	09/26/01 15:47	03/18/02 09:45 WG50762
FED NI, 6010	09/25/01 14:00	03/18/02 09:45	WG50761	PREP FOR	1	09/26/01 15:47	03/18/02 09:45 WG50762
FED PB, 6010	09/25/01 14:00	03/18/02 09:45	WG50761	PREP FOR	1	09/26/01 15:47	03/18/02 09:45 WG50762
ED ZN, 6010	09/25/01 14:00	03/18/02 09:45	WG50761	PREP FOR	1	09/26/01 15:47	03/18/02 09:45 WG50762

**QC SUMMARY** 

RO<u>JE</u>CT: 01092695

TALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

CROSS REFERENCE REPORT

<b>5</b>	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
_	01092695-1	T-01-S-01 (M)	WG50761	WG50762	26-Sep-01 14:34	DWK	SW6010B
Ì	01092695-2	T-02-S-01 (M)	WG50761	WG50762	26-Sep-01 14:39	DWK	SW6010B
	01092695-3	T-03-S-01 (M)	WG50761	WG50762	26-Sep-01 14:44	DWK	SW6010B
•	01092695-4	T-04-S-01 (M)	WG50761	WG50762	26-Sep-01 14:49	DWK	SW6010B
	01092695-5	T-05-S-01 (M)	WG50761	WG50762	26-Sep-01 15:59	DWK	SW6010B
	01092695-6	T-05-S-02 (M)	WG50761	WG50762	26-Sep-01 15:32	DWK	SW6010B
	01092695-7	T-06-S-02 (M)	WG50761	WG50762	26-Sep-01 15:47	DWK	SW6010B

#### METHOD BLANK

oratory ID: WG50761-1 Analysis Lot: WG50762 Prep Batch: WG50761 Sample Tag:

· · · · · · · · · · · · · · · · · · ·	Analyte	Units	Value	RDL	Analysis Date
	Cadmium	MG/KG	1.00	1.0	26-Sep-01 13:23
	Chromium	MG/KG	2.00	2.0	26-Sep-01 13:23
	Nickel	MG/KG	0.300	0.30	26-Sep-01 13:23
	Lead	MG/KG	0.600	0.60	26-Sep-01 13:23
	Zinc	MC / KG	4 00	4.0	26-Sen-01 13:23

#### LABORATORY CONTROL SAMPLE

or Ty ID: WG50761-2 Analysis Lot: WG50762 Sample Tag:

Analyt	e Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Cadmin	m MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
Chromit	m MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
Nicke	1 MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
Lea	d MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27
■ Zir	c MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 13:27

#### TRIX SPIKE/MATRIX SPIKE DUPLICATE

oratory IDs: WG50761-4, WG50761-5 Analysis Lot: WG50762 Sample Spiked: 01092695-5 Site: T-05-S-01 (M) Sample Tag:

Analyte	Units		Amt MSD Spiked	Sample Value	MS Value	MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits
Cadmium	MG/KG	500	500	3.0	450	440	89.0	87.0	75.0-125	3.39	20.0
Chromium	MG/KG	500	500	31	475	460	89.0	86.0	75.0-125	2.77	20.0
Nickel	MG/KG	500	500	24	470	450	89.0	85.0	75.0-125	4.34	20.0
Lead	MG/KG	500	500	160	620	600	92.0	88.0	75.0-125	3.28	20.0
Zinc	MG/KG	500	500	600	1050	1050	90.0	90.0	75.0-125	0.00	20.0

#### ABORATORY DUPLICATE

eratory ID: WG50761-3 Duplicate Sample: 01092695-5 Analysis Lot: WG50762

Analyte	Units	Measured	Replicate	RPD	Limits	Analysis Date
Cadmium	MG/KG	3.0	3.1	3.23	20.0	26-Sep-01 16:03
Chromium	MG/KG	31	32	3.17	20.0	26-Sep-01 16:03
Nickel	MG/KG	24	23	4.25	20.0	26-Sep-01 16:03

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OJECT: 01092695

S ANALYSIS (SW6010) AND PREPARATION (SW3051)

ABORATORY DUPLICATE

Laboratory ID: WG50761-3 Duplicate Sample: WG50762 Analysis Lot:

Analyte			-		Limits	Analysis Date
Lead	MG/KG		174	10.9	20.0	26-Sep-01 16:03
Zinc	MG/KG	600	640	6.45	20.0	26-Sep-01 16:03

## ITIAL CALIBRATION VERIFICATION

aboratory ID: WG50762-1 Analysis Lot: WG50762 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date	
Cadmium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 09:14	
Chromium	UG/ML	4.0	3.9	97.5	90.0-110	26-Sep-01 09:14	
Nickel	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 09:14	
Lead	UG/ML	4.0	4.0	100	90.0~110	26-Sep-01 09:14	
Zinc	UG/ML	4.0	3.9	97.5	90.0-110	26-Sep-01 09:14	

### ITIAL CALIBRATION BLANK

Laboratory ID: WG50762-2 Analysis Lot: WG50762

Analyte	Units	Value	RDL	Analysis Date
 Cadmium	UG/ML	1.00	1.0	26-Sep-01 09:22
Chromium	UG/ML	2.00	2.0	26-Sep-01 09:22
Nickel	UG/ML	0.300	0.30	26-Sep-01 09:22
Lead	UG/ML	0.600	0.60	26-Sep-01 09:22
Zinc	UG/ML	4.0U	4.0	26-Sep-01 09:22

### NTINUING CALIBRATION BLANK

Laboratory ID: WG50762-10 Analysis Lot: WG50762

Analyte	Units	Value	RDL	Analysis Date
Cadmium	UG/ML	1.00	1.0	26-Sep-01 14:59
Chromium	UG/ML	2.00	2.0	26-Sep-01 14:59
Nickel	UG/ML	0.300	0.30	26-Sep-01 14:59
Lead	UG/ML	0.600	0.60	26-Sep-01 14:59
Zinc	UG/ML	4.0U	4.0	26-Sep-01 14:59

aboratory ID: WG50762-13 Analysis Lot: WG50762

Analyte	Units	Value	RDL	Analysis Date
Cadmium	UG/ML	1.00	1.0	26-Sep-01 16:13
Chromium	UG/ML	2.00	2.0	26-Sep-01 16:13
Nickel	UG/ML	0.300	0.30	26-Sep-01 16:13
Lead	UG/ML	0.600	0.60	26-Sep-01 16:13
Zinc	tiG/Mt.	4 011	4.0	26-Sep-01 16:13

aboratory ID: WG50762-6 Analysis Lot: WG50762

	Analyte	Analyte Units		RDL	Analysis Date
	Cadmium	UG/ML	1.00	1.0	26-Sep-01 12:55
_	Chromium	UG/ML	2.00	2.0	26-Sep-01 12:55
	Nickel	UG/ML	0.300	0.30	26-Sep-01 12:55
	Lead	UG/ML	0.600	0.60	26-Sep-01 12:55
-	Zinc	UG/ML	4.0U	4.0	26-Sep-01 12:55

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ROJECT: 01092695

S ANALYSIS (SW6010) AND PREPARATION (SW3051)

NTINUING CALIBRATION BLANK

Laboratory ID: WG50762-8 Analysis Lot: WG50762

Analyte	Units	Value	RDL	Analysis Date
Cadmium	UG/ML	1.0U	1.0	26-Sep-01 13:58
Chromium	UG/ML	2.0U		26-Sep-01 13:58
Nickel	UG/ML	0.300	0.30	26-Sep-01 13:58
Lead	UG/ML	0.60U	0.60	26-Sep-01 13:58
Zinc	UG/ML	4.0U	4.0	26-Sep-01 13:58

TERFERENCE CHECK SAMPLE - A

Laboratory ID: WG50762-3 Analysis Lot: WG50762

	Analyte	Units	Spiked	Measured	*Recovery	Limits		Date
(	Cadmium	UG/ML	0.0	-0.0051	N/A	N/A	26-Sep-01 0	9:27
Ct	nromium	UG/ML	0.0	-0.00078	N/A	N/A	26-Sep-01 0	9:27
•	Nickel	UG/ML	0.0	-0.0027	N/A	N/A	26-Sep-01 0	9:27
	Lead	UG/ML	0.0	-0.0014	n/a	N/A	26-Sep-01 0	9:27
Ė	Zinc	UG/ML	0.0	-0.013	N/A	N/A	26-Sep-01 0	9:27

INTERFERENCE CHECK SAMPLE - AB

Laboratory ID: WG50762-4 Analysis Lot: WG50762

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Cadmium	UG/ML	1.0	0.97	97.4	80.0-120	26-Sep-01 09:32
Chromium	UG/ML	0.50	0.48	96.2	80.0-120	26-Sep-01 09:32
 Nickel	UG/ML	1.0	0.98	98.5	80.0-120	26-Sep-01 09:32
Lead	UG/ML	0.050	0.047	93.8	80.0-120	26-Sep-01 09:32
Zinc	UG/ML	1.0	0.93	93.0	80.0-120	26-Sep-01 09:32

ONTINUING CALIBRATION VERIFICATION

aboratory ID: WG50762-12 Analysis Lot: WG50762 Sample Tag:

•	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1	Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 16:08
	Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 16:08
	Nickel	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 16:08
_	Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 16:08
1	Zinc	UG/ML	4,0	4.0	100	90.0-110	26-Sep-01 16:08

aboratory ID: WG50762-5 Analysis Lot: WG50762 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 12:50
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
Nickel	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 12:50
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50

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OJECT: 01092695

AND ANALYSIS (SW6010) AND PREPARATION (SW3051)

NTINUING CALIBRATION VERIFICATION

Laboratory :	ID:	WG50762-7	Analysis Lot	: WG50762	Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 13:54
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54
Nickel	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 13:54
Zina	TIC /MT	4 0	4 0	2.00	90 0-110	26-800-01 13:54

Laboratory ID: WG50762-9 Analysis Lot: WG50762 Sample Tag:

Analyt	e Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Cadmiu Chromiu Nicke Lea Zin	l UG/ML d UG/ML	4.0 4.0 4.0 4.0	4.1 4.0 4.1 4.1	100 102 102	90.0-110 90.0-110 90.0-110 90.0-110 90.0-110	26-Sep-01 14:55 26-Sep-01 14:55 26-Sep-01 14:55 26-Sep-01 14:55 26-Sep-01 14:55

Page : 4 26-Oct-2001 12:10

SHIPPING & RECEIVING

PHONE # 309-692-9688 FAX # 309-692-9689





0201

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

CLIENT	ALL SHADED AREAS MO				1 11/1/1/			<del></del>	
1) KEYSTONE	PROJECT NUMBER 19718.09	P. O. NUMBER	MEANS S		(3) A	NALYS	IS REQU	JESTED	(FOR LAB USE ONLY) 0 109 2694-8
ADDRESS	PHONE NUMBER	FAX NUMBER	DATE SH			7	T		LOGIN # 01092695-7
5010 STONE MILL Rd	812-336-0972		9/19,	101	778	14			LOGGED BY: PFI
CITY	SAMPLER (PLEASE PRINT)		MATRIX TY	PES:	12 9	, וע			LAB PROJ. #
STATE BloomINGTON, IN 47408	JAD/RA	d	WW-WASTEW	WW-WASTEWATER DW-DRINKING WATER		ो ह	1 1	} }	TEMPLATE:
CONTACT PERSON	SAMPLER'S	, r	GW-GROUND WWSL-SLUDG	WATER					PROJ. MGR.:
BOB ATEN	SIGNATORE		NA9-SOLID		12	1		1 1	]
130B TITEN	Mutt. a	len	OTHER:		1 1/2	" 3			
SAMPLE DESCRIPTION	DATE TIME COLLECTED	SAMPLE TYPE GRAB COMP	MATRIX TYPE	TOTAL # OF CONT	0	256			REMARKS
T-TL-1-6-01(m)	9/19/01 15:10	X	GW	1	×				
T-TL-2-6-01 (m)	9/19/01 18:17:	×	6W	1	$ \times $				
T-TL-3-6-01 (m)	7/19/01 15:25	×	6W	2	×				EXTRA VOLUME For MS/MSD
T-TL-3-6-02 (m)	9/12/01 15:25	X	6W	1	×	Ì			
7-TL-4 6-01 m	9/15/01 15:35	×	SW	1	X				
TW-7-6-01 (m)	7/19/01 14:55	X	600	1	X				
TF8-6-01 (m)	9/19/01 07:40	X	ow	1	X				
TRB-5-01 (M)	9/19/01 07:40	X	WIL	1	X				
T-01-8-01 (m)	9/19/01 11:00	×	NAS	1	×				
T-02-5-01 (m)	9/15/01 10:50	X	NAS	1	×				
1-03-5-01 (m)	9/19/01 10:30	X	NAS	1	X				
T-04-5-01 (m)	9/19/01 10:20	X	NAS	1	X	<u> </u>			
(RUSH TAT IS SUBJECT TO POC LABS APPROVAL AND SURCHARGE)  RUSH RESULTS VIA (PLEASE CIRCLE)  FA	ORMAL AUGU AX PHONE ERENT FROM ABOVE:		6	this area the samp this area	you requesi le temperat	t that th ure is o he lab to	e lab no utside o	tify you, before f the range of	ceipt at the lab. By initialing e proceeding with analysis, if 0.1-6.0°C. By not initialing cal testing regardless of the
RELINQUISHED BY: (SIGNATURE)	DATE RECEIVED BY: (SIGNA	ATURE)	!		DATE	E	$\overline{}$	COMME	NTS: (FOR LAB USE ONLY)
$\ (\tau)\ $	19/01						( 8 )		
	TIME 730				TIME	E d			
	DATE RECEIVED AT LAB BY	(SIGNATURE)			DATI	H			URE UPON RECEIPT COR N
	/ \	a //		•	91	901	SAMPL	E(S) RECEIVE	ED ON ICE OR N
	TIME ///	K H			TIMI	E 1	DOTT	CC CU L CD WI	THADCOURTE VOLUME COOM
	Illen	1).(/ le	Z-	- 	1/8	de	DAMPL	ES MECEIVEI	D WITHIN HOLD TIME(S)
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PHONE # 309-692-9688 FAX # 309-692-9689



AINE CHATOME ANDRON

PAGE 2\_OF\_2

	ALL SHAD	ED AREAS MU	<u>IST</u> BE CO	MPLETE	D BY CLIEN	(PLEASE F	PRINT)					<u> </u>
1) KEYSTONE	19718.		P.O. NUMB	ER	PICK-		3	) AN	ALYSIS	REQUEST	ED Allestan	11 /
CLIENT  LEYSTONE  ADDRESS  SOIO STONE MILL RU  CITY STATE ZIP Blooming Ton IN 47408  CONTACT PERSON	812-336-	1	FAX NUMB	ER	DATE SI			(	2			LOGIN # 0109 2695-7 LOGGED BY: PJE
STATE Blooming TON, IN 47408	SAMPLER (PLEASE PRIN	/ RAA		-  -  -	MATRIX TY  WW-WASTEW  DW-DRINKING  GW-GROUND	ATER S WATER	METALS	TACNED	Et 6157			TEMPLATE:
CONTACT PERSON BOB 17-EN	L SIGNATURE	rench	<u> ک</u>	<u>.</u>	WWSL-SLUDI NAS-SOLID OTHER:	3E	M	E 117	ME			·
2 SAMPLE DESCRIPTION	DATE COLLECTED	TIME	SAMPLI GRAB	COMP	MATRIX TYPE	TOTAL # OF CONT	107		paca			REMARKS
7-05-8-01 (M)	9/19/01	9:55	×		NAS	2	X					EXTRA VOLUME FOR
T-05-5-02 jmg	9/19/01		×		NAS	1	X					
T-05-5-02 mg T-06-5-01 mg	9/19/01	9:45	×		NAS	l	X					
						<b></b>						
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2		<del>                                     </del>			<b> </b>		$ar{\parallel}$				<del>                                     </del>	
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)  RUSH RESULTS VIA (PLEASE CIRCLE)  F	ORMAL  AX FERENT FROM ABOVE	PHONE			6	this area y the sample	you req e temp you allo	uest the erature ow the	at the l	ab notify yo	ou, before ange of 0.	elpt at the lab. By initialing proceeding with analysis, if 1-6.0°C. By not initialing Il testing ragardless of the
1) // HA	/19/01 TIME	/ED BY: (SIGNA	TURE)		<del></del>			DATE TIME		8 _	COMMENT	TS: (FOR LAB USE ONLY)
RELINQUISHED BY: (SIGNATURE)	730 DATE RECEIV	VED AT LAB BY:	(SIGNATU	RE)			9	DATE 7-19-0 TIME	2 <b>√</b> 8 8	HILL PROC AMPLE(S) OTTLES FI OTTLES FI	ESS STAI RECEIVED I ECEIVED I LLED WITI	RE UPON RECEIPT  RTED PRIOR TO RECEIPT  OON-ICE  IN GOOD CONDITION  H ADEQUATE VOLUME  WITHIN HOLO TIME(S)  COR N  OON TO THE TO

000016

## PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section. Commerical Carrier (UPS, FEDEX, etc.) livery Method: Laboratory Pick-Un Drop Off Project Earth Tech Store Cooler Shipping Container # (PDC / Other): \_By: \_\_A\RH\_\_\_ Received (date time)\_ Opened (If different)\_ By: Preliminary Examination Checklist Did the shipping container arrive with an air bill/shipping slip?..... YES NO NA If YES, carrier name & air bill #: (Place any shipping documentation in file folder) Were custody seals on the outside of the shipping container?.... If YES, a: Were the custody seals intact upon arrival?.... b: Enter the Seal Date and Name (enter "NA" if not available): 9-19-01 Was the Chain of Custody (COC) documentation provided with the shipment?..... NO\* If YES, a: Was the COC fully executed in ink by the shipper?...... NO\* b: coc#: 201 and 9901 c: Was the project identifiable from the COC?..... \*ои & If No, how was this determined? d: Was the COC properly signed as received by the Laboratory..... at was the temperature in the Cooler? 5 ° Deg C. Were samples received within criteria of 2-6° Deg C? (Processed Water/Wastewater are excluded from the temperature criteria) NO\* Did the cooler contain Ice? Sample Examination & Check-In Checklist (YES NO\* Were samples packaged in conformance to generally accepted practices?..... Did all sample containers arrive intact and sealed?..... Did all sample containers have secure and completed labels? If sample containers possessed tags, circle: Tags only Tags + Labels Were caps of individual bottles/vials free from tape and/or custody seals?.... Did all labels and/or tags agree with COC?..... Were QC samples included?..... NO Did pH checks confirm indicated preservations? (if applicable)..... Did volumes, containers, & preservatives seem appropriate to indicate tests?..... YES NO\* Were VOA vials (waters) free from bubbles? (if applicable)..... If any NO\*, Proceed with Login (YES / NO) Project Manager:\_\_\_\_\_\_ Date:\_\_\_\_\_ ils/Comments:

# Appendix I Tail Tracks Area Surface Water Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01121541

December 17, 2001



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

#### Report Cover Page

Earth Tech

5010 Stone Mill Road

Bloomington, IN 47401

Attn: Mr. Bob Aten

Date Received: 06-Dec-01 Date Reported: 24-Dec-01

PO #:

PDC Cust. # : 205746

Login No. 01121541

This report includes information regarding the following described samples as received by the laboratory and is only valid for the parameters tested. This report contains 3 results page(s) not including the cover page(s).

ample No. Client ID Site Locator

Certified by:

Stepping, Mractor of Client Services

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NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230 US Army Corps of Engineers Validation for Chemical Analysis in support of the Hazardous, Toxic and Radioactive Waste Program f Illinois Certification for Bacteriological Analysis in Drinking Water -Lab Registry No. 17533

Drhaking Water Certifications: Indiana (C-IL-04); Kansas (E-10338); Kentucky (90058); Missouri (00870); Wisconsin (998294430)

Vastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998294430) Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin (998294430)

UST Certification: Iowa (240)

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#### Laboratory Results

Earth Tech

5010 Stone Mill Road

Date Received: 06-Dec-01 Date Reported: 24-Dec-01

PO #:

Bloomington, IN 47401

PDC Cust. # : 205746

Attn: Mr. Bob Aten

Login No. 01121541

Sample No: 01121541-1

Client ID: TO-4

Site: Locator:

Collect Date:

e: 06-DEC-01 15:00

Parameter	Result	Units D	ite By
PA METHOD 200.7 Sample Preparation			Dec-01 10:00 KJP
EPA METHOD 200.7 rev 4.4			
Cadmium Chromium	0.011	mg/l 11-I	Dec-01 10:00 JMP Dec-01 10:00 JMP
Nickel Lead	< 0.010	the programme and the control of the design of the program	Dec-01 10:00 JMP Dec-01 10:00 JMP
<b>■</b> Cinc	0.15	mg/l 11-[	Dec-01 10:00 JMP



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### Laboratory Results

Earth Tech

5010 Stone Mill Road

Date Received: 06-Dec-01 Date Reported: 24-Dec-01

PO #:

Bloomington, IN 47401

PDC Cust. # : 205746

Attn: Mr. Bob Aten

Login No. 01121541

Sample No: 01121541-2

Client ID:

TO-2

Site: Locator:

Collect Date: 06-DEC-01 15:15

Parameter	Res	ult Units	Date By
PA METHOD 200.7	erman errorma vivilen is en 1800 kilomis (200 alog et men men errorma		nna nachalann omwekka okonowowa komm <u>er new</u> men ili.
Sample Preparation EPA METHOD 200.7 rev 4	4		10-Dec-01 10:00 KJP
Cadmium Chromium	< 0.0° 0.0°	the second of the control of the second of t	11-Dec-01 10:00 JMP 11-Dec-01 10:00 JMP
Nickel Lead	< 0.00		11-Dec-01 10:00 JMP 11-Dec-01 10:00 JMP
	0.02		11-Dec-01 10:00 JMP



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## Laboratory Results

Earth Tech

5010 Stone Mill Road

Bloomington, IN 47401

Attn: Mr. Bob Aten

Date Received: 06-Dec-01 Date Reported: 24-Dec-01

PO #:

PDC Cust. # : 205746

Login No. 01121541

Sample No: 01121541-3

Client ID: TO-1

Site:

Locator:

Collect Date:

06-DEC-01 15:30

Parameter	Result	Units Date	Ву
PA METHOD 200.7			
Sample Preparation EPA METHOD 200.7 rev 4.4		10-Dec-01	10:00 KJP
Cadmium		mg/l 11-Dec-01	
Chromium Nickel		mg/l 11-Dec-01 mg/l 11-Dec-01	contract to the second second second second second
Lead	0.090 1	mg/l 11-Dec-01	10:00 JMP
I de la companya del companya de la companya del companya de la co	が、これのは、日本・北京・大学・日本のでは、18.1年18年 	mg/l 11-Dec-01	TO:00 OWD

## PDC LA PRATORIES, INC. 2231 WEST ALTORFER DRIVE PEORIA, IL 61615

PHONE # 309-692-9688 FAX # 309-692-9689



ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

CLIENT Kensfor	PROJECT NUM		P.O. NUMB		MEANS S			SIS REQUE	STED	(FOR LAB USE ONLY)
ADDRESS	PHONE NUM	BER	FAX NUMB	ER	DATE S	HIPPED				LOGIN # 6//2154/ LOGGED BY:
CITY STATE ZIP  CONTACT PERSON	SAMPLER  QLEASE PRINT  VA7 ~  SAMPLER'S  SIGNATURE	13 B	2125 13	e <sub>r</sub>	MATRIX TY  WW-WASTEY DW-DRINKIN GW-GROUNE WWSL-SLUDO NAS-SOLID  OTHER:	VATER G WATER				LAB PROJ. # TEMPLATE: PROJ. MGR.:
SAMPLE DESCRIPTION	COLLECTED	COLLECT	ED GRAB	COMP	MATRIX TYPE	TOTAL # OF CONT		1.		REMARKS
10-61	12/4/01	1500	)		GW	5w				
73-7		15/3								
70-1	1	15:3	0		2	7		ì		
								1. 1		
		-								
				<del>                                     </del>						· · · · · · · · · · · · · · · · · · ·
		<u> </u>			<u> </u>			+-+	11	
(RUSH TAT IS SUBJECT TO POC LABS APPROVAL AND SURCHARGE)  RUSH RESULTS VIA (PLEASE CIRCLE)  F/	ORMAL AX ERENT FROM ABOVE:	RUSH			6	this area y the sample this area y	ou request that e temperature is	the lab notify Outside of II	you, before poer range of 0.	ipt at the lab. By initialing proceeding with analysis, if 1-6.0°C. By not initialing testing regardless of the
	DATE, RECEIV	ED BY: (SK	GNATURE)				DATE	R	COMMENT	S: (FOR LAB USE ONLY)
	TIME						TIME			
RELINQUISHED BY: (SIGNATURE)	DATE RECEIV	VED AT LAB	BY: (SIGNATU				DATE  12/4/01  TIME  16:00	CHILL PE SAMPLE BOTTLES BOTTLES	OCESS STAR S) RECEIVED RECEIVED II FILLED WITH	RE UPON RECEIPT TED PRIOR TO RECEIPT ON ICE N GOOD CONDITION H ADEQUATE VOLUME WITHIN HOLD TIME(S)  TO N  C OR N  OR N  OR N  OR N

# Appendix J F-Pond Surface Water Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092801

November 6, 2001

Earth Tech

Project: F-Pond/Waters

SDG #01092801

TABLE OF CONTENTS

# TABLE OF CONTENTS SDG #01092801

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**CASE NARRATIVE** 



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# CASE NARRATIVE - Earth Tech/Keystone

## F Pond - Waters Project No. 19718.09

PDC Laboratories, Inc. received 6 water samples on September 21, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092801 for Total Metals and VOA analysis.

Sample	e Id's	Date					
Field Lab		Collected	Received				
Trip Blank	01092801-1	09/21/01	09/21/01				
FRB-W-01 (M,V)	01092801-2	09/21/01	09/21/01				
FRB-D-01 (M,V)	01092801-3	09/21/01	09/21/01				
F-07-W-01 (M,V)	01092801-4	09/21/01	09/21/01				
F-07-W-02 (M,V)	01092801-5	09/21/01	09/21/01				
F-08-W-01 (M,V)	01092801-6	09/21/01	09/21/01				

# **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by Method 200.8 and 200.7; VOAs by Method 624.

# Metals QC Summary (200.8)

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092801-4. All recoveries were within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

All Interference Check Samples were within QC criteria.

EAR01092801.DOC





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## Metals QC Summary (200.7)

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092801-4. All recoveries were within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

All Interference Check Samples were within QC criteria.

## **VOA QC Summary**

All holding time criteria were met for all samples.

The instrument performance check using Bromofluorobenzene (BFB) met method acceptance criteria.

All Initial and Continuing Calibration Standards met method acceptance criteria.

All Method Blanks were free of contamination for target analytes.

All Surrogate Spike recoveries were within method QC criteria.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092801-4. All recoveries were within the specified QC limits.

The associated Laboratory Control Samples (LCS) were within method acceptance criteria.

#### Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Barbara Beard	Name:	Barbara Beard
Date:	Nov. 6, 2001	Title:	Project Manager

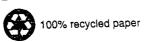
EAR01092801.poc



# PDC Laboratories, Inc. DATA QUALIFIERS

A	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
С	The batch control sample failed to meet the required acceptance criteria.
Ε	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
ĸ	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
s	Surrogate compound diluted below a reliable quantitation level.
T	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery failed to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
NR	Not requested.
K	Miscellaneous; see comments.

PDC Laboratories, Inc.



TABULATED RESULTS



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Method		•	01092801-1 205746 TRIP BLANK 21-SEP-01 07:00:00 D1:1	01092801-2 205746 FRB-W-01 (M,V) 21-SEP-01 10:10:00 undiluted	01092801-2 11/02/04 FRB-W-01 (M,V) 21-SEP-01 10:10:00 D1:1
EPA 624	1,1-Dichloroethane	ug/l	10 U		10 U
EPA 624	trans-1,2-Dichloroethene	ug/l	10 U		10 U
EPA 624	Trichloroethene	ug/l	1.6 U		1.6 U
EPA 624	Xylenes (Total)	ug/l	10 U		10 U
EPA 200.7	Iron	mg/l		0.77	
EPA 200.8	Aluminum	mg/i		0.0094 J	
EPA 200.8	Barium	mg/l		0.00027 J	
EPA 200.8	Cadmium	mg/l		0.005 U	•
EPA 200.8	Chromium	mg/l		0.0011 J	
EPA 200.8	Copper	mg/l		0.0026 J	
EPA 200.8	Lead	mg/l		0.003 U	
EPA 200.8	Manganese	mg/l		0.00053 J	
0.8	Zinc	mg/l		0.0019 J	
EPA 200.8 R5.4	Mercury	ug/l		0.2 U	





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Method	Laboratory Sample Client Descript Site/Loca Date Collet Parameter		01092801-3 205746 FRB-D-01 (M,V) 21-SEP-01 10:10:00 undiluted	01092801-3 205746 FRB-D-01 (M,V) 21-SEP-01 10:10:00 D1:1	01092801-4 11 <u>/02</u> /08 F-07-W-01 (M,V) 21-SEP-01 12:30:00 undiluted
EPA 624	1,1-Dichloroethane	ug/l		10 U	
EPA 624	trans-1,2-Dichloroethene	ug/l		10 U	
EPA 624	Trichloroethene	ug/l		1.6 U	
EPA 624	Xylenes (Total)	ug/l		10 U	
EPA 200.7	Iron	mg/i	0.018 J		16
EPA 200.8	Aluminum	mg/l	0.014 J		0.1 J
EPA 200.8	Barium	mg/i	0.00083 J		0.034 J
EPA 200.8	Cadmium	mg/l	0.005 U		0.005 U
EPA 200.8	Chromium	mg/l	0.01 U		0.0065 J
EPA 200.8	Copper	mg/l	0.025 U		0.0092 J
EPA 200.8	Lead	mg/l	0.003 U		0.047
EPA-200.8	Manganese	mg/l	0.00046 J		16
0.8	Zinc	mg/l	0.002 J		0.27
EPA 200.8 R5.4	Mercury	ug/l	0.2 U		0.2 U

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Method		•	01092801-4 205746 F-07-W-01 (M,V) 21-SEP-01 12:30:00 D1:1	01092801-5 205746 F-07-W-02 (M,V) 21-SEP-01 12:30:00 undiluted	01092801-5 11/202/201 F-07-W-02 (M,V) 21-SEP-01 12:30:00 D1:1
EPA 624	1,1-Dichloroethane	ug/l	10 U		10 U
EPA 624	trans-1,2-Dichloroethene	ug/l	10 U		10 U
EPA 624	Trichloroethene	ug/l	1.6 U		1.6 U
EPA 624	Xylenes (Total)	ug/i	10 U		10 U
EPA 200.7	Iron	mg/l	·	15	
EPA 200.8	Aluminum	mg/l		0.076 J	
EPA 200.8	Barium	mg/l		0.034 J	
EPA 200.8	Cadmium	mg/l		0.005 U	
EPA 200.8	Chromium	mg/l		0.0055 J	
EPA 200.8	Copper	mg/l		0.0084 J	
EPA 200.8	Lead	mg/l		0.038	
EPA-200.8	Manganese	mg/l		16	•
8.00	Zinc	mg/l	•	0.22	
EPA 200.8 R5.4	Mercury	ug/l		0.2 U	

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Laboratori Comple No :	01092801-6	
Laboratory Sample No.:	205746	
Client Description: Site/Locator:	F-08-W-01 (M,V)	
Date Collected:	21-SEP-01 15:15:00	
_	المحقن اللمسي	

11/02/01

01092801-6

205746

Method		Locator: Collected:	F-08-W-01 (M,V) 21-SEP-01 15:15:00 undiluted	F-08-W-01 (M,V) 21-SEP-01 15:15:00 D1:1
EPA 624	1,1-Dichloroethane	ug/l		10 U
EPA 624	trans-1,2-Dichloroethene	ug/i		10 U
EPA 624	Trichloroethene	ug/l		2
EPA 624	Xylenes (Total)	ug/l		10 U
EPA 200.7	Iron	mg/l	0.19	
EPA 200.8	Aluminum	mg/l	0.087 J	
EPA 200.8	Barium	mg/l	0.038 J	
EPA 200.8	Cadmium	mg/l	0.005 U	
EPA 200.8	Chromium	mg/l	0.0046 J	
EPA 200.8	Copper	mg/l	0.0021 J	
EPA 200.8	Lead	mg/l	0.029	
EPA-200.8	Manganese	mg/l	0.2	
00.8	Zinc	mg/l	0.026	
EPA 200.8 R5.4	Mercury	ug/l	0.2 U	,

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**DATES & DILUTIONS REPORT** 

	Dil. Factor	Measure Dat	Hold Date	Batch ID	Assoc.Code	Dil. Factor	Analysis Dat	Analyis Hold Date	Analysis Batch
Eab (D 01092801	1387	Client ID	TRIP BLANK		ilect Date: 09/2	1/01 07:0	0⊸∂∵⊹∴R <b>e</b> ce	ive Date: 09/21	01/47/15
FED M6240						1	09/28/01 16:4	12 10/05/01 07:	00 WG49808
Lab ID: 01092801	-2	Client ID	FRB-W-01.(M,V)	Company Co	llect/Date:⊹09/2	1/01 10 1	0 Rece	ive:Date: 09/21/	01/17/15
FED AL, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	42 03/20/02 10:	10 WG50241
FED BA, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4		10 WG50241
FED CD, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	42 03/20/02 10:	10 WG50241
FED CR, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	12 03/20/02 10:	10 WG50241
FED CU, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	12 03/20/02 10:	10 WG50241
FED FE, 200.7		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 10:3	38 03/20/02 10:	10 WG50200
ED HG, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	12 10/19/01 10:	10 WG50241
FED MN, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	2 03/20/02 10:	10 WG50241
FED PB, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	2 03/20/02 10:	10 WG50241
ED ZN, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	2 03/20/02 10:	10 WG50241
FED M6240						1	09/28/01 17:1	· ·	
Lab ID: 01092801	-3	Client ID	FRB-D-01 (M,V)	∵. Co	llect Date: 09/2	1/01:10:10	Rece	ive Date: ∞09/21/	01:17:15
ED AL, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:	10 WG50241
FED BA, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:	10 WG50241
ED CD, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:	10 WG50241
ED CR, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:	10 WG50241
FED CU, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:	10 WG50241
F.D. 200.7		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 10:4	4 03/20/02 10:	10 WG50200
_b +iG, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 10/19/01 10:1	10 WG50241
FED MN, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:1	I0 WG50241
ED PB, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:1	10 WG50241
ED ZN, 200.8		09/25/01 12:00	03/20/02 10:10	WG50049	PREP FOR	1	09/27/01 13:4	7 03/20/02 10:1	10 WG50241
FED M6240						1	10/01/01 12:3		
ab ID: 01092801	4	Client ID	F-07-W-01:(M;V)	yta Sor <b>Co</b>	llect Date:: 09/2	1/01/12:30	) ∹ Recei	ve Date: 09/21/	01,1795
FED AL, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	30 WG50241
FED BA, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	30 WG50241
ED CD, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	30 WG50241
PED CR, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	30 WG50241
FED CU, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	30 WG50241
ED FE, 200.7		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 10:5	0 03/20/02 12:3	80 WG50200
FED HG, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 10/19/01 12:3	0 WG50241
FED MN, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	0 WG50241
ED PB, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	0 WG50241
FED ZN, 200.8		09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 14:0	3 03/20/02 12:3	0 WG50241
FED M6240						1	09/28/01 19:0	7 10/05/01 12:3	0 WG49808

	THE MAKES THE WALLS	The second second	11	A 3 78 4 14 8		
Client ID	(F=0/-W-02-(M;V)	· · · · · · · · · · · · · · · · · · ·	llect Date: 09	21/01/12	:30 Receive	Date 09/21/01 17:15
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	03/20/02 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	03/20/02 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	03/20/02 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	03/20/02 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	03/20/02 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 11:20	03/20/02 12:30 WG50200
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	10/19/01 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	03/20/02 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1 .	09/27/01 13:52	03/20/02 12:30 WG50241
09/25/01 12:00	03/20/02 12:30	WG50049	PREP FOR	1	09/27/01 13:52	03/20/02 12:30 WG50241
				1	09/28/01 18:09	10/05/01 12:30 WG49808
Client ID	F-08-W-01 (M;V)	, Co	llect Date::>09/	21/01 15	15 - Receive	Date: 709/21/01 17:15
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 11:26	03/20/02 15:15 WG50200
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	10/19/01 15:15 WG50241
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
00/20/01 12:00						
09/25/01 12:00	03/20/02 15:15	WG50049	PREP FOR	1	09/27/01 13:58	03/20/02 15:15 WG50241
_	09/25/01 12:00 09/25/01 12:00	09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30 09/25/01 12:00 03/20/02 12:30  Client ID F-08-W-01 (M:V) 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15 09/25/01 12:00 03/20/02 15:15	09/25/01 12:00 03/20/02 12:30 WG50049 09/25/01 12:00 03/20/02 12:30 WG50049 09/25/01 12:00 03/20/02 12:30 WG50049 09/25/01 12:00 03/20/02 12:30 WG50049 09/25/01 12:00 03/20/02 12:30 WG50049 09/25/01 12:00 03/20/02 12:30 WG50049 09/25/01 12:00 03/20/02 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09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 PREP FOR 1 09/27/01 13:58 09/25/01 12:00 03/20/02 15:15 WG50049 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**QC SUMMARY** 

## PDC Laboratories Quality Control Summary Report

ROJECT: 01092801

LS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

C CROSS REFERENCE REPORT

1	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092801-2	FRB-W-01 (M,V)	WG50049	WG50241	27-Sep-01 13:42	JTM	EPA 200.8
1	01092801-3	FRB-D-01 (M,V)	WG50049	WG50241	27-Sep-01 13:47	JTM	EPA 200.8
	01092801-4	F-07-W-01 (M,V)	WG50049	WG50241	27-Sep-01 14:03	JTM	EPA 200.8
	01092801-5	F-07-W-02 (M,V)	WG50049	WG50241	27-Sep-01 13:52	JTM	EPA 200.8
	01092801-6	F-08-W-01 (M,V)	WG50049	WG50241	27-Sep-01 13:58	JTM	EPA 200.8

27-Sep-01 13:31 27-Sep-01 13:31 27-Sep-01 13:31

27-Sep-01 13:31

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4	Laboracory	ID:	MG30043-1 A	marysis	LOC: WG50241	Sample	1ag: WG50049
			Analyte	Units	Value	RDL	Analysis Date
			Aluminum	MG/L	0.0092J	0.20	27-Sep-01 13:31
•	<b>—</b> 1		Chromium	MG/L	0.0100	0.010	27-Sep-01 13:31
4	,		Manganese	MG/L	0.015U	0.015	27-Sep-01 13:31
			Copper	MG/L	0.025U	0.025	27-Sep-01 13:31
•			Zinc	MG/L	0.0016J	0.020	27-Sep-01 13:31

0.00500

0.200

U0500.0

0.200

LABORATORY CONTROL SAMPLE

Laboratory ID:	WG50049-2	Analysis Lot:	WG50241	Sample '	Taq:

Cadmium MG/L Barium MG/L

Mercury UG/L

Lead MG/L

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Da	te
Aluminum	MG/L	5.55	5.40	97.3	85.0-115	27-Sep-01 14	:22
Chromium	MG/L	5.55	5.80	104	85.0-115	27-Sep-01 14	:22
Manganese	MG/L	5.55	5.50	99.1	85.0-115	27-Sep-01 14	:22
Copper	MG/L	5.55	5.40	97.3	85.0-115	27-Sep-01 14	:22
Zinc	MG/L	5.55	5.80	104	85.0-115	27-Sep-01 14	:22
Cadmium	MG/L	5.55	5.40	97.3	85.0-115	27-Sep-01 14	:22
Barium	MG/L	5.55	5.30	95.5	85.0-115	27-Sep-01 14	:22
Lead	MG/L	5.55	5.50	99.1	85.0-115	27-Sep-01 14	:22
Mercury	UG/L	4.40	4.10	93.0	85.0-115	27-Sep-01 14	:22

0.0050

0.20 0.0030

0.20

### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

borstory IDe	. WG50040_3	WG50049-4 Applyeig Lot WG	350241 Sample	Sniked 01092801-4	Site: F-07-W-01	(M V) Ca	mole Tar.

Analyte	Units		Amt MSD Spiked	•	MS Value	MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits	
Aluminum	MG/L	5.5	5.5	0.10	5.7	5.5	101	99.0	70.0-130	3.60	20.0	
 Chromium	MG/L	5.5	5.5	0.0065	5.6	5.6	95.6	95.6	70.0-130	0.00	20.0	
Manganese	MG/L	5.5	5.5	16	21	22	90.0	108	70.0-130	4.65	20.0	
Copper	MG/L	5.5	5.5	0.0092	5.1	5.1	84.4	84.4	70.0-130	0.00	20.0	
Zinc	MG/L	5.5	5.5	0.27	5.6	5.7	96.0	98.0	70.0-130	1.80	20.0	
Cadmium	MG/L	5.5	5.5	0.00500	5.2	5.1	93.7	91.9	70.0-130	1.94	20.0	
Barium	MG/L	5.5	5.5	0.034	5.1	5.2	92.0	94.0	70.0-130	1.94	20.0	
Lead	MG/L	5.5	5.5	0.047	5.3	5.4	95.0	97.0	70.0-130	1.87	20.0	
Mercury	· UG/L	4.4	4.4	0.200	4.7	4.8	107	109	70.0-130	2.10	20.0	

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## ROJECT: 01092801

s ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

NITIAL CALIBRATION VERIFICATION

#### INITIAL CALIBRATION VERIFICATION

Laboratory ID: WG50241-1 Analysis Lot: WG50241 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis	Date
Aluminum	MG/L	0.025	0.025	100	90.0-110	27 Can 01	00 50
		0.025	0.025	100	90.0-110	27-Sep-01	09:52
Chromium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01	09:52
Manganese	MG/L	0.025	0.026	104	90.0-110	27-Sep-01	09:52
Copper	MG/L	0.025	0.027	108	90.0-110	27-Sep-01	09:52
Zinc	MG/L	0.025	0.026	104	90.0-110	27-Sep-01	09:52
Cadmium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01	09:52
Barium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01	09:52
Lead	MG/L	0.025	0.027	108	90.0-110	27-Sep-01	09:52
Mercury	UG/L	1.5	1.6	107	90.0-110	27-Sep-01	09.52

#### INITIAL CALIBRATION BLANK

poratory ID: WG50241-2 Analysis Lot: WG50241

	Analyte	Units	Value	RDL	Analysis Date
	Aluminum Chromium	MG/L	0.20U 0.010U	0.20	27-Sep-01 10:01
	Manganese	MG/L	0.0150	0.015	27-Sep-01 10:01 27-Sep-01 10:01
	Copper Zinc	MG/L MG/L	0.025U 0.020U	0.025 0.020	27-Sep-01 10:01 27-Sep-01 10:01
	Cadmium Barium	MG/L MG/L	0.0050U 0.20U	0.0050 0.20	27-Sep-01 10:01 27-Sep-01 10:01
_	Lead Mercury	MG/L UG/L	0.0030U 0.20U	0.0030 0.20	27-Sep-01 10:01 27-Sep-01 10:01

#### NTINUING CALIBRATION BLANK

oratory ID: WG50241-10 Analysis Lot: WG50241

	Analyte	Units	Value	RDL	Analysis Date
A	luminum	MG/L	0.200	0.20	27-Sep-01 14:40
C	hromium	MG/L	0.010U	0.010	27-Sep-01 14:40
Ma	nganese	MG/L	0.015U	0.015	27-Sep-01 14:40
	Copper	MG/L	0.025U	0.025	27-Sep-01 14:40
	Zinc	MG/L	7.1e-05J	0.020	27-Sep-01 14:40
_	Cadmium	MG/L	0.00500	0.0050	27-Sep-01 14:40
	Barium	MG/L	0.200	0.20	27-Sep-01 14:40
	Lead	MG/L	0.0030U	0.0030	27-Sep-01 14:40
	Mana	TTC: /T	0 2011	0.20	27-Fon-01 24.40

oratory ID: WG50241-5 Analysis Lot: WG50241

Ana	lyte Units	Value	RDL	Analysis Date
Alum	inum MG/L	0.200	0.20	27-Sep-01 11:35
Chro	mium MG/L	0.0100	0.010	27-Sep-01 11:35
Manga	nese MG/L	0.0150	0.015	27-Sep-01 11:35
Co	pper MG/L	0.0250	0.025	27-Sep-01 11:35
	Zinc MG/L	0.0200	0.020	27-Sep-01 11:35
Cad	mium MG/L	0.0050U	0.0050	27-Sep-01 11:35
Ba Ba	rium MG/L	0.200	0.20	27-Sep-01 11:35
	Lead MG/L	0.00300	0.0030	27-Sep-01 11:35
Mer	cury UG/L	0.200	0.20	27-Sep-01 11:35

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## PDC Laboratories Quality Control Summary Report

ROJECT: 01092801

## S ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

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Laboratory ID: WG50241-7 Analysis Lot: WG50241

Analyte	Units	Value	RDL	Analysis Date
Aluminum	MG/L	0.200	0.20	27-Sep-01 13:06
Chromium	MG/L	0.010U	0.010	27-Sep-01 13:06
Manganese	MG/L	0.0150	0.015	27-Sep-01 13:06
Copper	MG/L	0.0250	0.025	27-Sep-01 13:06
Zinc	MG/L	0.0200	0.020	27-Sep-01 13:06
Cadmium	MG/L	0.00500	0.0050	27-Sep-01 13:06
<b>Barium</b>	MG/L	0.200	0.20	27-Sep-01 13:06
Lead	MG/L	0.00300	0.0030	27-Sep-01 13:06
Mercury	UG/L	0.200	0.20	27-Sep-01 13:06

INTERFERENCE CHECK SAMPLE - A

Laboratory ID: WG50241-3 Analysis Lot: WG50241

Analyte	Units Spiked		Measured	%Recovery	Limi	ts Date
Aluminum	MG/L	50	50.42629175	101	80.0-120	27-Sep-01 10:16
Chromium	MG/L	0.0	0.00065	N/A	N/A	27-Sep-01 10:16
Manganese	MG/L	0.0	0.0017	N/A	N/A	27-Sep-01 10:16
Copper	MG/L	0.0	0.00070	N/A	N/A	27-Sep-01 10:16
Zinc	MG/L	0.0	0.0031	N/A	N/A	27-Sep-01 10:16
Cadmium	MG/L	0.0	-6.4e-05	N/A	N/A	27-Sep-01 10:16
Barium	MG/L	0.0	0.0031	N/A	N/A	27-Sep-01 10:16
Lead	MG/L	0.0	0.00029	N/A	N/A	27-Sep-01 10:16
Mercury	UG/L	0.0	0:0017	N/A	N/A	27-Sep-01 10:16

TERFERENCE CHECK SAMPLE - AB

oratory ID: WG50241-4 Analysis Lot: WG50241

	Analyte	Units	Spiked	Measured	*Recovery	Limit	s Analysis Date
i	Aluminum	MG/L	50	52.00765268	10	4 80.0-120	27-Sep-01 10:22
	Chromium	MG/L	0.050	0.054	108	80.0-120	27-Sep-01 10:22
	Manganese	MG/L	0.050	0.055	110	80.0-120	27-Sep-01 10:22
	Copper	MG/L	0.050	0.053	106	80.0-120	27-Sep-01 10:22
<b>.</b>	Zinc	MG/L	0.10	0.10	105	80.0-120	27-Sep-01 10:22
	Cadmium	MG/L	0.10	0.11	106	80.0-120	27-Sep-01 10:22
	Barium	MG/L	0.050	0.058	117	80.0-120	27-Sep-01 10:22
	Lead	MG/L	0.0050	0.0059	118	80.0-120	27-Sep-01 10:22
	Mercurv	ug/l	0.0	-0.0019	N/A	N/A	27-Sep-01 10:22

NTINUING CALIBRATION VERIFICATION

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	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
***************************************	Aluminum	MG/L	0.025	0.025	100	90.0-110	27-Sep-01 11:50
	Chromium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 11:50
	Manganese	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 11:50
	Copper	MG/L	0.025	0.028	110	90.0-110	27-Sep-01 11:50
	Zinc	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 11:50
_	Cadmium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 11:50
	Barium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 11:50
	Lead	MG/L	0.025	0.027	108	90.0-110	27-Sep-01 11:50
<b>=</b>	Mercury	UG/L	1.5	1.6	107	85.0-115	27-Sep-01 11:50

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ROJECT: 01092801

S ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

ONTINUING CALIBRATION VERIFICATION

Laboratory II	D:	WG50241-8	Analysis	: Lot:	WG50241	Sample Tag:
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	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Aluminum	MG/L	0.025	0.025	100	90.0-110	27-Sep-01 13:22
	Chromium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 13:22
	Manganese	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 13:22
	Copper	MG/L	0.025	0.027	108	90.0-110	27-Sep-01 13:22
	Zinc	MG/L	0.025	0.027	108	90.0-110	27-Sep-01 13:22
	Cadmium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 13:22
_	Barium	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 13:22
	Lead	MG/L	0.025	0.026	104	90.0-110	27-Sep-01 13:22
	Mercury	UG/L	1.5	1.7	113	85.0-115	27-Sep-01 13:22

Laboratory ID: WG50241-9 Analysis Lot: WG50241 Sample Tag:

Units	Spiked	Measured	*Recovery	Limits	Analysis Date
MG/L	0.025	0.026	104	90.0-110	27-Sep-01 14:31
MG/L	0.025	0.026	104	90.0-110	27-Sep-01 14:31
MG/L	0.025	0.026	104	90.0-110	27-Sep-01 14:31
MG/L	0.025	0.027	108	90.0-110	27-Sep-01 14:31
MG/L	0.025	0.027	108	90.0-110	27-Sep-01 14:31
MG/L	0.025	0.026	104	90.0-110	27-Sep-01 14:31
MG/L	0.025	0.026	104	90.0-110	27-Sep-01 14:31
MG/L	0.025	0.027	108	90.0-110	27-Sep-01 14:31
UG/L	1.5	1.7	113	85.0-115	27-Sep-01 14:31
	MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG/L	MG/L 0.025 MG/L 0.025 MG/L 0.025 MG/L 0.025 MG/L 0.025 MG/L 0.025 MG/L 0.025 MG/L 0.025 MG/L 0.025	MG/L 0.025 0.026 MG/L 0.025 0.026 MG/L 0.025 0.026 MG/L 0.025 0.027 MG/L 0.025 0.027 MG/L 0.025 0.027 MG/L 0.025 0.026 MG/L 0.025 0.026 MG/L 0.025 0.026 MG/L 0.025 0.026	MG/L 0.025 0.026 104 MG/L 0.025 0.026 104 MG/L 0.025 0.026 104 MG/L 0.025 0.027 108 MG/L 0.025 0.027 108 MG/L 0.025 0.027 108 MG/L 0.025 0.026 104 MG/L 0.025 0.026 104 MG/L 0.025 0.026 104 MG/L 0.025 0.027 108	MG/L 0.025 0.026 104 90.0-110 MG/L 0.025 0.026 104 90.0-110 MG/L 0.025 0.026 104 90.0-110 MG/L 0.025 0.027 108 90.0-110 MG/L 0.025 0.027 108 90.0-110 MG/L 0.025 0.027 108 90.0-110 MG/L 0.025 0.026 104 90.0-110 MG/L 0.025 0.026 104 90.0-110 MG/L 0.025 0.026 104 90.0-110 MG/L 0.025 0.026 104 90.0-110 MG/L 0.025 0.027 108 90.0-110

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#### PDC Laboratories Quality Control Summary Report

OJECT: 01092801

S ANALYSIS (EPA 200.7) AND PREPARATION (SW3051)

CROSS REFERENCE REPORT

Lab ID	Client ID	Prep. Lot Analysis Lo	t Analysis Date	Analyst	Method Sample Tag
01092801-2	FRB-W-01 (M,V)	WG50049 WG5020	0 27-Sep-01 10:38	dwk	EPA 200.7
01092801-3	FRB-D-01 (M,V)	WG50049 WG5020	0 27-Sep-01 10:44	dwk	EPA 200.7
01092801-4 F	-07-W-01 (M,V)	WG50049 WG5020	0 27-Sep-01 10:50	dwk	EPA 200.7
01092801-5 F	-07-W-02 (M,V).	WG50049 WG5020	0 27-Sep-01 11:20	dwk	EPA 200.7
01092801-6 F	-08-W-01 (M,V)	WG50049 WG5020	0 27-Sep-01 11:26	dwk	EPA 200.7

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Laboratory ID: WG50049-1 Analysis Lot: WG50200 Sample Tag: WG50049

Analyte Units Value RDL Analysis Date

Iron MG/L 0.10U 0.10 27-Sep-01 10:27

BORATORY CONTROL SAMPLE

Laboratory ID: WG50049-2 Analysis Lot: WG50200 Sample Tag:

Analyte Units Spiked Measured \*Recovery Limits Analysis Date

| Iron MG/L 5.55 5.50 99.1 85.0-115 27-Sep-01 10:32

SPIKE/MATRIX SPIKE DUPLICATE

aboratory IDs: WG50049-3, WG50049-4 Analysis Lot: WG50200 Sample Spiked: 01092801-4 Site: F-07-W-01 (M,V) Sample Tag:

Amt MS Amt MSD Sample MS MSD MS MSD Rec RPD
Analyte Units Spiked Spiked Value Value Value % Rec % Rec Limits RPD Limits

Iron MG/L 5.5 5.5 16 22 21 108 90.0 70.0-130 18.2 20.0

INITIAL CALIBRATION VERIFICATION

pratory ID: WG50200-1 Analysis Lot: WG50200 Sample Tag:

Analyte Units Spiked Measured \*Recovery Limits Analysis Date

Iron MG/L 4.00 4.0 100 90.0-110 27-Sep-01 08:32

INITIAL CALIBRATION BLANK

pratory ID: WG50200-2 Analysis Lot: WG50200

Analyte Units Value RDL Analysis Date

Iron MG/L 0.10U 0.10 27-Sep-01 08:39

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DJECT: 01092801

ANALYSIS (EPA 200.7) AND PREPARATION (SW3051)

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CONTINUING CALIBRATION BLANK

bratory ID: WG50200-10 Analysis Lot: WG50200

Analyte Units Value RDL Analysis Date

Iron MG/L 0.0049J 0.10 27-Sep-01 11:38

Laboratory ID: WG50200-6

Analysis Lot: WG50200

Analyte Units Value RDL Analysis Date

Iron MG/L 0.10U 0.10 27-Sep-01 09:50

Laboratory ID: WG50200-8

Analysis Lot: WG50200

Analyte Units Value

RDL Analysis Date

Iron MG/L 0.0038J 0.10 27-Sep-01 11:07

ERFERENCE CHECK SAMPLE - A

ratory ID: WG50200-3 Analysis Lot: WG50200

Iron MG/L

Analyte Units Spiked Measured %Recovery

Limits /L 200 201.92 101 80.0-120

27-Sep-01 08:45

ERENCE CHECK SAMPLE - AB

ratory ID: WG50200-4 Analysis Lot: WG50200

Analyte Units Spiked Measured \*Recovery Limits Analysis Date

Iron MG/L 200 216.13 108 80.0-120 27-Sep-01 08:51

TINUING CALIBRATION VERIFICATION

ratory ID: WG50200-5 Analysis Lot: WG50200 Sample Tag:

Analyte Units Spiked Measured %Recovery Limits

Analysis Date

Iron MG/L 4.0 4.0 100 90.0-110 27-Sep-01 09:45

ratory ID: WG50200-7 Analysis Lot: WG50200 Sample Tag:

Analyte Units Spiked Measured \*Recovery Limits Analysis Date

Iron MG/L 4.0 4.0 100 90.0-110 27-Sep-01 11:02

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PDC Laboratories Quality Control Summary Report

OJECT: 01092801

ANALYSIS (EPA 200.7) AND PREPARATION (SW3051)

CONTINUING CALIBRATION VERIFICATION

Laboratory ID: WG50200-9 Analysis Lot: WG50200 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	MG/L				90.0-110	27-Sep-01 11:32

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## PDC Laboratories Quality Control Summary Report

ROJECT: 01092801

ILE ORGANICS BY GC/MS (EPA624)

C CROSS REFERENCE REPORT

<b> </b>	Lab ID	Client ID	Prep. Lot Analysis Lot	Analysis Date	Analyst	Method Sample Tag
_	01092801-1	TRIP BLANK	WG49808	28-Sep-01 16:42	TJP	EPA 624 D1:1
	01092801-2	FRB-W-01 (M,V)	WG49808	28-Sep-01 17:11	TJP	EPA 624 D1:1
ŀ	01092801-3	FRB-D-01 (M,V)	WG49817	01-Oct-01 12:36	TJP	EPA 624 D1:1
,	01092801-4	F-07-W-01 (M,V)	WG49808	28-Sep-01 19:07	TJP	EPA 624 D1:1
	01092801-5	F-07-W-02 (M,V)	WG49808	28-Sep-01 18:09	TJP	EPA 624 D1:1
	01092801-6	F-08-W-01 (M,V)	WG49808	28-Sep-01 18:38	TJP	EPA 624 D1:1

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	boratory ID:	WG49808-1	Analysis	Lot: WG4980	08 Sample	Tag: N/A	D1:1
=	<b>.</b>	Analyte	Units	Value	RDL	Analysi	s Date
	1,1	-Dichloroethane	UG/L	100	10	28-Sep-01	15:44
Т	trans-1,2	2-Dichloroethene	UG/L	100	10	28-Sep-01	15:44
		Trichloroethene	: UG/L	1.6U	1.6	28-Sep-01	15:44
_	_	Xylenes (Total)	UG/L	100	10	28-Sep-01	15:44
	poratory ID:	WG49817-2	Analysis	Lot: WG4981	.7 Sample	Tag: N/A	D1:1

Analyte	Units	Value	RDL	Analysis Date
1,1-Dichloroethane cans-1,2-Dichloroethene Trichloroethene Xylenes (Total)	UG/L UG/L UG/L UG/L	10U 10U 1.6U 10U	10 10 1.6	01-Oct-01 10:32 01-Oct-01 10:32 01-Oct-01 10:32 01-Oct-01 10:32

#### BORATORY CONTROL SAMPLE

Laboratory ID: WG49808-2 Analysis Lot: WG49808 Sample Tag: D1:1

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1,1-Dichloroethane	UG/L	20.0	17.0	85.0	67.0-121	28-Sep-01 16:13
trans-1,2-Dichloroethene	UG/L	20.0	15.0	75.0	60.0-107	28-Sep-01 16:13
Trichloroethene	UG/L	20.0	16.0	80.0	65.0-109	28-Sep-01 16:13

Doratory ID: WG49817-3 Analysis Lot: WG49817 Sample Tag: D1:1

Analyte		Spiked		*Recovery	Limits	Analysis Date
1,1-Dichloroethane		20.0	18.0		67.0-121	01-Oct-01 11:01
trans-1,2-Dichloroethene	UG/L	20.0	17.0	85.0	60.0-107	01-Oct-01 11:01
Trichloroethene	UG/L	20.0	19.0	95.0	65.0~109	01-Oct-01 11:01

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ROJECT: 01092801

TILE ORGANICS BY GC/MS (EPA624)
ATRIX SPIKE/MATRIX SPIKE DUPLICATE

#### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Laboratory IDs: WG49808-3, WG49808-4 Analysis Lot: WG49808	Sample Spiked: 01092801-4	Client ID: F-07-W-01 (M,V)	Sample Tag: D1
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Analyte	Units		Amt MSD Spiked	Sample Value	MS Value	MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits
trans-1.2-Dichloroethene	UG/L	20	20	100	15	16	75.0	90.0	60.0-107	6.45	40.0
1,1-Dichloroethane	UG/L	20	20	100	16	17	80.0		67.0-121	6.06	
Trichloroethene	UG/L	20	20	1.60	16	17	80.0	85.0	65.0-109	6.06	40.0

#### CONTINUING CALIBRATION VERIFICATION

boratory ID: WG49817-1 Analysis Lot: WG49817 Sample Tag: D1:1

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1,1-Dichloroethane	UG/L	20	19	95.0	75.0-130	01-Oct-01 09:52
trans-1,2-Dichloroethene	UG/L	20	20	100	70.0-130	01-Oct-01 09:52
Trichloroethene	UG/L	20	19	95.0	65.0-135	01-Oct-01 09:52
Xylenes (Total)	UG/L	60	57	95.0	70.0-130	01-Oct-01 09:52
1,2-Dichloroethane-d4 (SURR)	UG/L	30	31.199	104	70.0-130	01-Oct-01 09:52
Toluene-d8 (SURR)	UG/L	30	30.5439	102	70.0-130	01-Oct-01 09:52
Bromofluorobenzene (SURR)	UG/L	30	29.986	100	70.0-130	01-Oct-01 09:52

#### SURROGATE RECOVERIES

LaDoratory ID: 01092801-1 Analysis Lot: WG49808 Client ID: TRIP BLANK Sample Tag: D1:1

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1,2-Dichloroethane-d	4 (SURR)	UG/L	30.0	28.0	93.3	86.0-122	28-Sep-01 16:42
Toluene-d	8 (SURR)	UG/L	30.0	24.0	80.0	75.0-124	28-Sep-01 16:42
Bromofluorobenzen	e (SURR)	UG/L	30.0	26.0	86.7	79.0-134	28-Sep-01 16:42

boratory ID: 01092801-2 Analysis Lot: WG49808 Client ID: FRB-W-01 (M,V) Sample Tag: D1:1

	Analyte	Units	Spiked		*Recovery	Limits	Analysis Date
1,2-Dichloroethane-d4	(SURR)	UG/L	30.0	28.0		86.0-122	28-Sep-01 17:11
Toluene-da	(SURR)	UG/L	30.0	24.0	80.0	75.0-124	28-Sep-01 17:11
Bromofluorobenzene	(SURR)	UG/L	30.0	28.0	93.3	79.0-134	28-Sep-01 17:11

aboratory ID: 01092801-3 Analysis Lot: WG49817 Client ID: FRB-D-01 (M,V) Sample Tag: D1:1

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1,2-Dichloroethane-d4	(SURR)	UG/L	30.0	32.0	107	86.0-122	01-Oct-01 12:36
■ Toluene-d8	(SURR)	UG/L	30.0	28.0	93.3	75.0-124	01-Oct-01 12:36
Bromofluorobenzene	(SURR)	UG/L	30.0	29.0	96.7	79.0-134	01-Oct-01 12:36

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#### ROJECT: 01092801

TILE ORGANICS BY GC/MS (EPA624)
PROGATE RECOVERIES

Laboratory ID: 01092801-4 A	nalysis	Lot: WG49808	Client	ID: F-07-1	W-01 (M,V) S	Sample Tag: D1:1
Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1,2-Dichloroethane-d4 (SURR)	UG/L	30.0	31.0	103	86.0-122	28-Sep-01 19:07
Toluene-d8 (SURR)					75.0-124	28-Sep-01 19:07
Bromofluorobenzene (SURR)	UG/L	30.0	29.0	96.7	79.0-134	28-Sep-01 19:07
boratory ID: 01092801-5 A	nalysis	Lot: WG49808	Client	: ID: F-07-	√-02 (M,V) S	Sample Tag: D1:1
Analyte	Units	Spiked	Measured	*Recovery		Analysis Date
1,2-Dichloroethane-d4 (SURR)	tig/t	30.0	30.0		86.0-122	28-Sep-01 18:09
Toluene-d8 (SURR)			28.0		75.0-124	28-Sep-01 18:09
Bromofluorobenzene (SURR)		30.0	29.0		79.0-134	
ooratory ID: 01092801-6 A	nalysis	Lot: WG49808	Client	ID: F-08-W	V-01 (M,V) S	Sample Tag: Dl:1
Analyte	Units	Spiked	Measured			Analysis Date
1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) Bromofluorobenzene (SURR)	UG/L	30.0	31.0	103	86.0-122	28-Sep-01 18:38
Describerate (SURR)	UG/L	30.0	28.0	93.3	75.0-124	28-Sep-01 18:38
Bromolidorobenzene (SURK)	UG/L	30.0	28.0	93.3	79.0-134	28-Sep-01 18:38
				_		
Làboratory ID: WG49808-1 An	alysis I	ot: WG49808	Client	ID: MB Sa	umple Tag: D1:	1
Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Analyte	Units UG/L UG/L UG/L	Spiked 30.0 30.0 30.0	Measured 30.0 28.0 29.0	*Recovery 100 93.3 96.7	Limits	Analysis Date 28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44
Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) mofluorobenzene (SURR) .oratory ID: WG49808-2 Ana	Units UG/L UG/L UG/L UG/L	Spiked 30.0 30.0 30.0 30.0	Measured 30.0 28.0 29.0 Client	100 93.3 96.7	Limits 	Analysis Date 28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44
Analyte  1,2-Dichloroethane-d4 (SURR)  Toluene-d8 (SURR)  mofluorobenzene (SURR)  .oratory ID: WG49808-2 Analyte	Units UG/L UG/L UG/L UG/L UG/L	Spiked 30.0 30.0 30.0 sot: WG49808 Spiked	Measured 30.0 28.0 29.0 Client Measured	*Recovery  100 93.3 96.7  ID: LCS S *Recovery	Limits  86.0-122 75.0-124 79.0-134  ample Tag: D1  Limits	Analysis Date  28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44 :1  Analysis Date
Analyte  1,2-Dichloroethane-d4 (SURR)  Toluene-d8 (SURR)  mofluorobenzene (SURR)  .oratory ID: WG49808-2 Analyte	Units UG/L UG/L UG/L UG/L UG/L	Spiked 30.0 30.0 30.0 sot: WG49808 Spiked	Measured 30.0 28.0 29.0 Client Measured	*Recovery  100 93.3 96.7  ID: LCS S *Recovery	Limits  86.0-122 75.0-124 79.0-134  ample Tag: D1  Limits	Analysis Date 28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44
Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) mofluorobenzene (SURR) .oratory ID: WG49808-2 Ana	Units UG/L UG/L UG/L UG/L US/L UNITS UNITS UG/L UG/L	Spiked 30.0 30.0 30.0 30.0 sot: WG49808 Spiked 30.0 30.0	30.0 28.0 29.0 Client Measured	*Recovery  100 93.3 96.7  ID: LCS S *Recovery  100 96.7	Limits  86.0-122 75.0-124 79.0-134  ample Tag: D1  Limits  86.0-122 75.0-124	Analysis Date  28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44 :1  Analysis Date  28-Sep-01 16:13 28-Sep-01 16:13
Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) mofluorobenzene (SURR)  Analyte  Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR)	Units UG/L UG/L UG/L alysis I Units UG/L UG/L UG/L	Spiked 30.0 30.0 30.0 30.0 sot: WG49808 Spiked 30.0 30.0 30.0	Measured 30.0 28.0 29.0 Client Measured 30.0 29.0 29.0	*Recovery  100 93.3 96.7  ID: LCS S *Recovery  100 96.7 96.7	Limits  86.0-122 75.0-124 79.0-134  ample Tag: D1  Limits  86.0-122 75.0-124	Analysis Date  28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44  :1  Analysis Date  28-Sep-01 16:13 28-Sep-01 16:13 28-Sep-01 16:13
Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) mofluorobenzene (SURR)  Analyte  .,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) Bromofluorobenzene (SURR)  Bromofluorobenzene (SURR)  I woratory ID: WG49808-3 Analyte	Units UG/L UG/L UG/L UIIts UIIts UIITS UIITS UIITS UIITS UIITS UIITS UIITS	Spiked 30.0 30.0 30.0 sot: WG49808 Spiked 30.0 30.0 30.0 30.0	30.0 28.0 29.0 Client Measured 30.0 29.0 Client	*Recovery  100 93.3 96.7  ID: LCS S *Recovery  100 96.7 96.7  ID: MS Sa	Limits  86.0-122 75.0-124 79.0-134  ample Tag: D1  Limits  86.0-122 75.0-124 79.0-134  mple Tag: D1:	Analysis Date  28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44  :1  Analysis Date  28-Sep-01 16:13 28-Sep-01 16:13 28-Sep-01 16:13
Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) mofluorobenzene (SURR)  Analyte  .,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) Bromofluorobenzene (SURR)  Bromofluorobenzene (SURR)  I woratory ID: WG49808-3 Analyte	Units  UG/L UG/L UG/L alysis I  Units  UG/L UG/L UG/L UG/L UG/L UG/L	Spiked  30.0 30.0 30.0  sot: WG49808  Spiked  30.0 30.0 30.0 30.0 Spiked	Measured  30.0 28.0 29.0 Client Measured  30.0 29.0 29.0 Client	*Recovery  100 93.3 96.7  ID: LCS S *Recovery  100 96.7 96.7 ID: MS Sa *Recovery	Limits  86.0-122 75.0-124 79.0-134  Elimits  86.0-122 75.0-124 79.0-134  mple Tag: D1:  Limits	Analysis Date  28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44 :1  Analysis Date  28-Sep-01 16:13 28-Sep-01 16:13
Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) mofluorobenzene (SURR)  .oratory ID: WG49808-2 Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) Bromofluorobenzene (SURR)  Bromofluorobenzene (SURR) Analyte  Analyte	Units  UG/L UG/L UG/L alysis I  Units  UG/L UG/L UG/L UG/L UG/L UG/L	Spiked  30.0 30.0 30.0 sot: WG49808  Spiked  30.0 30.0 30.0 sot: WG49808  Spiked	Measured  30.0 28.0 29.0 Client Measured  30.0 29.0 29.0 Client	*Recovery  100 93.3 96.7  ID: LCS S *Recovery  100 96.7 96.7 ID: MS Sa *Recovery	Limits  86.0-122 75.0-124 79.0-134  Elimits  86.0-122 75.0-124 79.0-134  mple Tag: D1:  Limits	Analysis Date  28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44 :1  Analysis Date  28-Sep-01 16:13 28-Sep-01 16:13 28-Sep-01 16:13
Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) Mofluorobenzene (SURR)  Analyte  1,2-Dichloroethane-d4 (SURR) Toluene-d8 (SURR) Bromofluorobenzene (SURR)  Analyte  Analyte  Analyte  Analyte  Analyte	Units UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L	Spiked  30.0 30.0 30.0 30.0  sot: WG49808  Spiked  30.0 30.0 sot: WG49808  Spiked  30.0 30.0 30.0	30.0 28.0 29.0 Client Measured 30.0 29.0 Client Measured	*Recovery  100 93.3 96.7  ID: LCS S *Recovery  100 96.7 96.7  ID: MS Sa *Recovery	Limits  86.0-122 75.0-124 79.0-134  ample Tag: D1  Limits  86.0-122 75.0-124 79.0-134  mple Tag: D1:  Limits	Analysis Date  28-Sep-01 15:44 28-Sep-01 15:44 28-Sep-01 15:44  :1  Analysis Date  28-Sep-01 16:13 28-Sep-01 16:13 1  Analysis Date  28-Sep-01 16:13 28-Sep-01 16:13

Page : 3 23-Oct-2001 13:10

#### PDC Laboratories Quality Control Summary Report

ROJECT: 01092801

TILE ORGANICS BY GC/MS (EPA624)

URROGATE RECOVERIES

:	Laboratory ID: WG49808-4	Ana	lysis Lot:	WG49808	Client	ID: MSD S	Sample Tag: D1:	L
1	Ar	nalyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
•	1,2-Dichloroethane-d4	(SURR)	UG/L	30.0	30.0	100	86.0-122	28-Sep-01 20:04

1,2-Dichloroethane-d4 (SURR) UG/L 30.0 30.0 100 86.0-122 28-Sep-01 20:04
Toluene-d8 (SURR) UG/L 30.0 29.0 96.7 75.0-124 28-Sep-01 20:04
Bromofluorobenzene (SURR) UG/L 30.0 28.0 93.3 79.0-134 28-Sep-01 20:04

boratory ID: WG49817-2 Analysis Lot: WG49817 Client ID: MB Sample Tag: D1:1

	Analyte	Units	Spiked		%Recovery	Limits	Analysis Date
1,2-Dichloroethane-de	4 (SURR)	UG/L	30.0	29.0		86.0-122	01-Oct-01 10:32
Toluene-di	8 (SURR)	UG/L	30.0	28.0	93.3	75.0-124	01-Oct-01 10:32
Bromofluorobenzene	e (SURR)	UG/L	30.0	29.0	96.7	79.0-134	01-Oct-01 10:32

boratory ID: WG49817-3 Analysis Lot: WG49817 Client ID: LCS Sample Tag: D1:1

•	Analyte		Spiked		*Recovery	Limits	Analysis Date
1,2-Dichloroethane-d4		UG/L	30.0	31.0		86.0-122	01-Oct-01 11:01
Toluene-d8	(SURR)	UG/L	30.0	30.0	100	75.0-124	01-Oct-01 11:01
Bromofluorobenzene	(SURR)	UG/L	30.0	29.0	96.7	79.0-134	01-Oct-01 11:01

**SHIPPING & RECEIVING** 

# 2231 WEST ALTORFER DRIVE PEORIL 61615

PHONE # 309-692-9688 FAX # 309-692-9689



921071

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	TO ANTICLE SECTION AND A SECTION OF THE PROPERTY OF THE SECTION AND A SECTION ASSESSMENT OF THE PROPERTY OF TH	SAMPLER		Quinter Carried		MATRIX TY	PES:		ļ	1	7	.  -	.   `	LAB PROJ. #
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1401-	SAMPLE DESCRIPTION	DATE	TIME COLLECTED	SAMPL GRAB	E TYPE	MATRIX	TOTAL #	13	15		£			REMARKS
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/	TIEIN RIANK	7-21-01	07.00	×		W72	.2	Х		7	7		1	
Ð	TOP	<del></del>		<u> </u>		<del></del>	4	$\leftarrow$			7.			
3		7-21-01		×		1052	7	X	*			$\dot{+}$		
	FRR-D-01 (M, V)	7-21-01	10:10	X		W12	-7	X	X				_	# 1
u	F-07-60-01/11/V)	9-21-01	12:30	<u>  ×</u> _		1.000	711	X	Χ.					Exten Vol fer MS/NGD
5	F-07-60-02 (M1 V)	9-21-01	12:30	×	1,11,414	1017:	4	К	X	:				
6	F-08-40-01 (m,v)	9-21-01	15:15	又		10-11	4	X	X					
/	F-01-P-02/m N	7-21-61	12.30	X		5 <u>=</u> 0	4	X	X					
2.	F-01-D-01 (m, v)	7-21-01	1230	Х	7.5	550	12	Χ.,	X					EXTIA VOL FOR
3	F-02-D-01 (MV)	7-21-01	14:15	X		<u> </u>	11	X	X					e e e e e diango de la fi
4		7-21-01	14:00	X		E)	4	X	×					
5	F-04-0-01 111 VI	1-21-01	15:00	×		559	4	X	×					
	F-05-17-01 (10 V)	7-21-01	17:40	X		三0	4	х	Х					
1000	TURNAROUND TIME REQUESTED, (PLEASE CIRCLE) NOF	MAL	RUSH	<del></del>	<u> </u>			tempe	rature					pt at the lab. By initialing
1907- 2802	(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND BURCHARGE)		200		4.5	(6)								roceeding with analysis, if -6.0°C. By not initialing
WO USA	RUSH RESULTS VIA (PLEASE CIRCLE) FAX		PHONE					ou allov	v the la					testing regardless of the
	FAX ® IF DIFFERENT FROM ABOVE: PHONE ® IF DIFFER  RELINQUISHED BY; (SIGNATURE)		D BY: (SIGNAT	(IDE)		<u> </u>	sample terri		ATE			COM	MENTS	: (FOR LAB USE ONLY)
	( 1 )	1-61	B B1. (GIGIAA)	OI IL,			•	"		<b>(</b> )	3)	COM	11412141	. (I OII DID OOL ONL!)
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2	RELINQUISHED BY: (SIGNATURE)	E HECEIVI	D AT LAB BY:	OIGNATUF	ic)		A		ATE /	;∥CH	ILL PR	OCESS	START	TED PRIOR TO RECEIPT (Y)OR N
20000	<del>                                    </del>	E /	الريسسيل	1	•		M	74	)//C	<b>″</b> ∥ во	TITLES	RECE	VED IN	ON ICE (************************************
75			an	-/	018	Casa	<u>W</u>	7	7/5					ITHIN HOLD TIME(S) OOR N

## PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section.

Delivery Method:	Drop Off	Commerical (	Carrier (UPS, FE	EDEX, etc.)	Ĺ	aboratory Pick-Up
Project Earth 7	Tech / Ken	stone	Cooler	l_of_	J _	
				ntainer #(PD	Other)	):
Received (date time)	91 <b>3</b> 1101	1715		By:	4 Indus	el
Opened (If different)_				By:	0	
Preliminary Examinat	tion Checklist		·			
Did the shipping contain If YES, carrier name &		air bill/shippi	ng slip?	•••••••••••		YES NO NA
(Place any shipping doc	sumentation in file	folder)				
Were custody seals on t	he outside of the s	hinning conta	iner?			(YES) NO*
If YES, a: Were the cus						YES NO*
b: Enter the Sea	l Date and Name	enter "NA" i	f not available	e): <i>9/21</i>		(123) 110
		(011101 1111 1		· · · · /////		_
Was the Chain of Custo	dy (COC) docume	entation provid	ded with the sl	hipment?		YES NO*
If YES, a: Was the COC						(YES) NO*
b: COC #: _ 9	21011 act identifiable fro	ind 921	D11A 1	3/8		
			9/	217.01	•••••	(YES) NO*
I	as this determined		<del></del>	<u>-</u>		
d: Was the COC	properly signed a	is received by	the Laborator	у	•••••	YES NO*
What was the temperatu	re in the Cooler?	II ° Deg C	•			
e samples received						YES (NO*)
	er/Wastewater are				•••••••	1123 (140)
Did the cooler contain Id					••••••	XES NO*
i -						
Sample Examination &	Check-In Check	<u>dist</u>				•
Were samples packaged	in conformance to	generally acc	cepted practic	es?	•••••	YES NO*
Did all sample container	s arrive intact and	sealed?				(YES NO*
Did all sample container				***************	••••••	MES NO*
If sample contain	ners possessed tag	s, circle: Ta	gs only Tag	s + Labels		
Were caps of individual						VES NO*
Did all labels and/or tags	s agree with COC	?				YES) NO*
Were QC samples includ	led?			•••••	•••••	YES NO
Did pH checks confirm i	ndicated preserve	tions? (if anni	icable)			YES NO (NA)
Did volumes, containers,						YES) NO*
Were VOA vials (waters						YES NO* NA
If any NO*, Proceed with	h Login (YES/N	O) Project M	lanager:	D	ate:	
Details/Comments:						
•				<del></del> -		<del></del>
			<del></del>			

## Appendix K F-Pond Soil/Sediment Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092802

November 7, 2001

Earth Tech

Project: F Pond/Soils

SDG #01092802

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## TABLE OF CONTENTS SDG #01092802

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CASE NARRATIVE



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

## CASE NARRATIVE - Earth Tech/Keystone

#### F Pond - Soils Project No. 19718.09

PDC Laboratories, Inc. received 7 soil samples on September 21, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092802 for total metals and VOA analysis.

Sample	e Id's.	Date				
Field	Lab	Collected	Received			
F-01-D-02 (M,V)	01092802-1	09/21/01	09/21/01			
F-01-D-01 (M,V)	01092802-2	09/21/01	09/21/01			
F-02-D-01 (M,V)	01092802-3	09/21/01	09/21/01			
F-03-D-01 (M,V)	01092802-4	09/21/01	09/21/01			
F-04-D-01 (M,V)	01092802-5	09/21/01	09/21/01			
F-05-D-01 (M,V)	01092802-6	09/21/01	09/21/01			
F-06-D-01 (M,V)	01092802-7	09/21/01	09/21/01			

### **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by SW846 6010; Mercury by SW846 7471; VOAs by SW846 8260.

## **Metals QC Summary**

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092802-2. All recoveries were within the specified QC limits except for Aluminum, Iron, Manganese, Lead, and Zinc. A Post Digestion spike (PDS) was performed for these elements, and all recoveries were within QC acceptance criteria except for Iron. A PDS was not strictly necessary in the case of Iron, because the





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concentration detected in the sample, 19000 MG/KG, exceeded the concentration of Iron spiked into the sample by a factor of 38, well above the factor of 4 cited in the EPA Guidance Document.

A Sample Duplicate was performed on sample 01092802-2. All recoveries were within the method specified QC recovery limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

All Interference Check Samples were within QC criteria.

### Mercury QC Summary

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092802-2. All recoveries were within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

## **VOA QC Summary**

All holding time criteria were met for all samples.

The instrument performance check using Bromofluorobenzene (BFB) met acceptance criteria.

All Initial and Continuing Calibration Standards met QC acceptance criteria.

All Method Blanks were free of contamination for target analytes.

Surrogate recoveries were within QC acceptance criteria for all samples except for 01092802, 01092802 MS and 01092802 MSD; and 01092802-5. Sample 01092802-5 was re-analyzed, and surrogate recoveries were again outside QC criteria. Matrix interference is suspected in both cases.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092802-2. All recoveries were outside specified QC limits. Matrix interference is suspected, as surrogate recoveries were also outside criteria for this sample, and all LCS recoveries were acceptable.

All associated Laboratory Control Sample (LCS) and Laboratory Duplicate recoveries were within QC acceptance criteria.

EAR01092802.DOC





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## Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

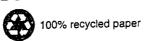
Signature:	Barbara Beard	Name:	Barbara Beard
Date:	November 7,01	Title:	Project Manager

EAR01092802.DOC

## PDC Laboratories, Inc. DATA QUALIFIERS

A	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
С	The batch control sample failed to meet the required acceptance criteria.
Ε	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
H	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
K	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
s	Surrogate compound diluted below a reliable quantitation level.
T	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery falled to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
٧R	Not requested.
<	Miscellaneous; see comments.

PDC Laboratories, Inc.



TABULATED RESULTS



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Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Method		•	01092802-1 205746 F-01-D-02 (M,V) 21-SEP-01 12:30:00 undiluted	01092802-1 205746 F-01-D-02 (M,V) 21-SEP-01 12:30:00 D1:1	01092802-2 205746 F-01-D-01 (M,V) 21-SEP-01 12:30:00 undiluted
SW8260B/SW5035	1,1-Dichloroethane	ug/kg		5 RU	
SW8260B/SW5035	1,1-Dichloroethane	ug/kg Dry		25 U	
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg		5 U	
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg Dry		25 U	
SW8260B/SW5035	Trichloroethene	ug/kg		5 RU	
SW8260B/SW5035	Trichloroethene	ug/kg Dry		25 U	
SW8260B/SW5035	m/p-Xylene	ug/kg		5 U	
50B/SW5035	m/p-Xylene	ug/kg Dry	•	25 U	
SW8260B/SW5035	Total xylenes	ug/kg		10 U	
SW8260B/SW5035	Total xylenes	ug/kg Dry	•	50 U	
SW6010B	Aluminum	mg/kg	3,100		3,000
SW6010B	Barium	mg/kg	23 J		23 J
SW6010B	Cadmium	mg/kg	0.56 J		0.5 J
SW6010B	Chromium	mg/kg	26		24
SW6010B	Copper	mg/kg	29		29
SW6010B	Iron	mg/kg	20,000		19,000
SW6010B	Lead	mg/kg	240		220
SW6010B	Manganese	mg/kg	1,300		1,300
SW6010B	Zinc	mg/kg	1,700		1,500
SW6010B	Aluminum	mg/kg Dry	16,000	•	21,000
W6010B	Barium	mg/kg Dry	120 J		160 J
SW6010B	Cadmium	mg/kg Dry	2.8 J		3.6 J
SVV6010B	Chromium	mg/kg Dry	130		170
W6010B	Copper	mg/kg Dry	140		210
SW6010B	Iron	mg/kg Dry	100,000		140,000
W6010B	Lead	mg/kg Dry	1,200		1,600
W6010B	Manganese	mg/kg Dry	6,500		9,300





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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

■ Method		•	01092802-2 205746 F-01-D-01 (M,V) 21-SEP-01 12:30:00 D1:1	01092802-3 205746 F-02-D-01 (M,V) 21-SEP-01 14:15:00 undiluted	01092802-3 205746 F-02-D-01 (M,V) 21-SEP-01 14:15:00 D1:1
SW8260B/SW5035	1,1-Dichloroethane	ug/kg	5 UFR		5 RU
SW8260B/SW5035	1,1-Dichloroethane	ug/kg Dry	36 UFR		18 U
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg	5 UF		5 U
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg Dry	36 UF		18 U
SW8260B/SW5035	Trichloroethene	ug/kg	5 UFR		5 RU
SW8260B/SW5035	Trichloroethene	ug/kg Dry	36 UFR		18 U
SW8260B/SW5035	m/p-Xylene	ug/kg	5 UF		5 U
0B/SW5035	m/p-Xylene	ug/kg Dry	36 UF		18 U.
SW8260B/SW5035	Total xylenes	ug/kg	10 UF		10 ป
W8260B/SW5035	Total xylenes	ug/kg Dry	71 UF		37 U
SW6010B	Aluminum	mg/kg		5,000	
SW6010B	Barium	mg/kg		46	
W6010B	Cadmium	mg/kg		0.88 J	
<b>SW6010B</b>	Chromium	mg/kg		19	
SW6010B	Copper	mg/kg		. 17	
W6010B	Iron	mg/kg		7,600	
SW6010B	Lead	mg/kg		210	•
W6010B	Manganese	mg/kg		440	
W6010B	Zinc	mg/kg		330	
SW6010B	Aluminum	mg/kg Dry		18,000	
W6010B	Barium	mg/kg Dry		170	
W6010B	Cadmium	mg/kg Dry		3.2 J	
SW6010B	Chromium	mg/kg Dry		70	
W6010B	Copper	mg/kg Dry		63	
SW6010B	Iron	mg/kg Dry		28,000	·
<b>■</b> W6010B	Lead	mg/kg Dry		780	
W6010B	Manganese	mg/kg Dry		1,600	
_					





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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Method		-	01092802-4 205746 F-03-D-01 (M,V) 21-SEP-01 14:00:00 undiluted	01092802-4 205746 F-03-D-01 (M,V) 21-SEP-01 14:00:00 D1:1	01092802-5 205746 F-04-D-01 (M,V) 21-SEP-01 15:00:00 undiluted
SW8260B/SW5035	1,1-Dichloroethane	ug/kg		5 RU	
SW8260B/SW5035	1,1-Dichloroethane	ug/kg Dry		26 U	
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg		5 U	
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg Dry		26 U	
SW8260B/SW5035	Trichloroethene	ug/kg		5 RU	
SW8260B/SW5035	Trichloroethene	ug/kg Dry		26 U	
SW8260B/SW5035	m/p-Xylene	ug/kg		5 U	
50B/SW5035	m/p-Xylene	ug/kg Dry		26 U	
SW8260B/SW5035	Total xylenes	ug/kg		10 U	
SW8260B/SW5035	Total xylenes	ug/kg Dry		53 U	
SW6010B	Aluminum	mg/kg	5,900		8,400
SW6010B	Barium	mg/kg	39 J		110
SW6010B	Cadmium	mg/kg	0.42 J		0.7 J
SW6010B	Chromium	mg/kg	18		23
SW6010B	Copper	mg/kg	26		21
SW6010B	iron	mg/kg	12,000		9,400
SW6010B	Lead	mg/kg	100		1,400
6W6010B	Manganese	mg/kg	790		340
SW6010B	Zinc	mg/kg	350		200
SW6010B	Aluminum	mg/kg Dry	31,000		19,000
W6010B	Barium	mg/kg Dry	200 J		240
SW6010B	Cadmium	mg/kg Dry	2.2 J		1.6 J
SW6010B	Chromium	mg/kg Dry	95		51
SW6010B	Copper	mg/kg Dry	140		47
SW6010B	Iron	mg/kg Dry	63,000		21,000
SVV6010B	Lead	mg/kg Dry	530		3,100
W6010B	Manganese	mg/kg Dry	4,200		760





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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Method		•	01092802-5 205746 F-04-D-01 (M,V) 21-SEP-01 15:00:00 D1:R2	01092802-5 205746 F-04-D-01 (M <sub>1</sub> V) 21-SEP-01 15:00:00 D1:1	01092802-6 205746 F-05-D-01 (M,V) 21-SEP-01 14:40:00 undiluted
CIAIOOGOD/CIA/EO3E	1.1-Dichloroethane		14 R	10	
SW8260B/SW5035	1,1-Dichloroethane	ug/kg ug/kg Dry	31	22	
SW8260B/SW5035	trans-1,2-Dichloroethene		5 U	5 U	
	•	ug/kg	11 U	-	
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg Dry		11	
SW8260B/SW5035	Trichloroethene	ug/kg	20 R	26	
SW8260B/SW5035	Trichloroethene	ug/kg Dry	<b>44</b> 60	57 43	
SW8260B/SW5035	m/p-Xylene	ug/kg	130	96	
0B/SW5035	m/p-Xylene	ug/kg Dry		82	
SW8260B/SW5035	Total xylenes	ug/kg	110		
6W8260B/SW5035	Total xylenes	ug/kg Dry	240	180	
SW6010B	Aluminum	mg/kg			9,600
SW6010B	Barium	mg/kg			61
SW6010B	Cadmium	mg/kg			1
SW6010B	Chromium	mg/kg			20
_SW6010B	Copper	mg/kg			23
W6010B	iron	mg/kg	•		11,000
SW6010B	Lead	mg/kg			58
W6010B	Manganese	mg/kg			120
W6010B	Zinc	mg/kg			170
SW6010B	Aluminum	mg/kg Dry			36,000
W6010B	Barium	mg/kg Dry			220
W6010B	Cadmium	mg/kg Dry			3.7
_SW6010B	Chromium	mg/kg Dry			74
W6010B	Copper	mg/kg Dry			85
SW6010B	fron	mg/kg Dry			41,000
W6010B	Lead	mg/kg Dry			210
W6010B	Manganese	mg/kg Dry			440





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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Makhad	Date 0	•	01092802-6 205746 F-05-D-01 (M,V) 21-SEP-01 14:40:00	01092802-7 205746 F-06-D-01 (M,V) 21-SEP-01 15:15:00	01092802-7 205746 F-06-D-01 (M,V) 21-SEP-01 15:15:00
Method	Parameter	·	D1:1	undiluted	D1:1
SW8260B/SW5035	1,1-Dichloroethane	ug/kg	5 RU		5 RU
SW8260B/SW5035	1,1-Dichloroethane	ug/kg Dry	18 U		20 U
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg	5 U		5 U
SW8260B/SW5035	trans-1,2-Dichloroethene	ug/kg Dry	18 U		20 U
SW8260B/SW5035	Trichloroethene	ug/kg	5 RU		5 RU
SW8260B/SW5035	Trichloroethene	ug/kg Dry	18 U		20 U
SW8260B/SW5035	m/p-Xylene	ug/kg	5 U		5 U
50B/SW5035	m/p-Xylene	ug/kg Dry	· 18 U		20 U
SW8260B/SW5035	Total xylenes	ug/kg	10 U		10 U
SW8260B/SW5035	Total xylenes	ug/kg Dry	37 U		40 U
SW6010B	Aluminum	mg/kg		6,500	
SW6010B	Barium	mg/kg		37 J	
SW6010B	Cadmium	mg/kg		0.56 J	
SW6010B	Chromium	mg/kg		17	
_SW6010B	Copper	mg/kg		16	
SW6010B	Iron	mg/kg		9,000	•
SW6010B	Lead	mg/kg		81	
EW6010B	Manganese	mg/kg		140	
SW6010B	Zinc	mg/kg		140	
SW6010B	Aluminum	mg/kg Dry		26,000	•
W6010B	Barium	mg/kg Dry		150 J	•
<b>W</b> 6010B	Cadmium	mg/kg Dry		2.2 J	
SW6010B	Chromium	mg/kg Dry		68	
sW6010B	Copper	mg/kg Dry		64	
SW6010B	Iron	mg/kg Dry		36,000	
W6010B	Lead	mg/kg Dry		320	
W6010B	Manganese	mg/kg Dry		560	





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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Method	Clien	y Sample No.: at Description: Site/Locator: Date Collected:	01092802-1 205746 F-01-D-02 (M,V) 21-SEP-01 12:30:00 undiluted	01092802-1 205746 F-01-D-02 (M,V) 21-SEP-01 12:30:00 D1:1	01092802-2 205746 F-01-D-01 (M,V) 21-SEP-01 12:30:00 undiluted	
SW6010B	Zinc	mg/kg Dry	8,500		11,000	
SW7471	Mercury	mg/kg	0.04 U		0.04 U	
SW7471	Mercury	mg/kg Dry	0.2 U		0.28 U	
SM (18) 2540B	Moisture	%	80		86	



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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Method		ry Sample No.: ent Description: Site/Locator: Date Collected:	01092802-2 205746 F-01-D-01 (M,V) 21-SEP-01 12:30:00 D1:1	01092802-3 205746 F-02-D-01 (M,V) 21-SEP-01 14:15:00 undiluted	01092802-3 205746 F-02-D-01 (M,V) 21-SEP-01 14:15:00 D1:1	
SW6010B	Zinc	mg/kg Dry		1,200		
SW7471	Mercury	mg/kg		0.04 U		
SW7471	Mercury	mg/kg Dry		0.15 U		
SM (18) 2540B	Moisture	%		73		



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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Mathed	Client S Da	Sample No.: Description: Site/Locator: Ite Collected:	01092802-4 205746 F-03-D-01 (M,V) 21-SEP-01 14:00:00	01092802-4 205746 F-03-D-01 (M,V) 21-SEP-01 14:00:00	01092802-5 205746 F-04-D-01 (M,V) 21-SEP-01 15:00:00	
Method	Parameter		undiluted	D1:1	undiluted	
SW6010B	Zinc	mg/kg Dry	1,800		440	
SW7471	Mercury	mg/kg	0.04 U		0.03 J	
SW7471	Mercury	mg/kg Dry	0.21 U		0.067 J	
SM (18) 2540B	Moisture	%	81 ·		55	





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Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Method		ory Sample No.: ent Description: Site/Locator: Date Collected:	01092802-5 205746 F-04-D-01 (M,V) 21-SEP-01 15:00:00 D1:R2	01092802-5 205746 F-04-D-01 (M,V) 21-SEP-01 15:00:00 D1:1	01092802-6 205746 F-05-D-01 (M,V) 21-SEP-01 14:40:00 undiluted	
SW6010B	Zinc	mg/kg Dry			630	
SW7471	Mercury	mg/kg			0.05	
SW7471	Mercury	mg/kg Dry			0.18	
SM (18) 2540B	Moisture	%			73	



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Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Attn: Mr. Bob Aten

Date Received: 09/21/01 Date Reported: 11/08/01

Purchase Order:

Customer No. 205746

Method	Client I	Sample No.: Description: lite/Locator: te Collected:	01092802-6 205746 F-05-D-01 (M,V) 21-SEP-01 14:40:00 D1:1	01092802-7 205746 F-06-D-01 (M,V) 21-SEP-01 15:15:00 undiluted	01092802-7 205746 F-06-Ď-01 (M,V) 21-SEP-01 15:15:00 D1:1
SW6010B	Zinc	mg/kg Dry		560	
SW7471	Mercury	mg/kg		0.046	
SW7471	Mercury	mg/kg Dry		0.18	
SM (18) 2540B	Moisture ·	%		75	



DATES & DILUTIONS REPORT

in	26	01	12	:20
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Page 1

								, ag	• 1
	Dil. Factor	Measure Dat	Hold Date	Batch ID	Assoc.Çode		Analysis Dat		Analysis Batch
Lab ID 01092802	-1 sizza (f.	Client ID	F-01-D-02 (M,V)	C	ollect Date: 09	/21/01 12:3	0 : Rec	eive Date: 09/2	21/01 17:15
MOIST			•			1	09/24/01 11	:51 09/28/01 1	2:30 WG49582
FED AL, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09		2:30 WG50686
FED BA, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	•	2:30 WG50686
ED CD, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	:54 03/20/02 1	2:30 WG50686
FED CR, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	:54 03/20/02 1	2:30 WG50686
FED CU, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	:54 03/20/02 1	2:30 WG50686
FED FE, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	:54 03/20/02 1	2:30 WG50686
FED HG, 7471						1	10/16/01 15	:00 10/19/01 1:	2:30 WG50491
ED MN, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	:54 03/20/02 1:	2:30 WG50686
ED PB, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	:54 03/20/02 1:	2:30 WG50686
FED ZN, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09	:54 03/20/02 1:	2:30 WG50686
ED M8260 ENCORE						1	09/25/01 14:	:45 10/06/01 16	6:00
ab ID 01092802	<b>-2</b>	Client ID	F-01-D-01 (M,V)	Co	ollect Date: 09/	21/01 12:30	l, ∶ Rec	eive Date: = 09/2	1/01 17:15
-MOIST						1	09/24/01 11:	:51 09/28/01 1:	2:30 WG49582
ED AL, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:	-	2:30 WG50686
FED BA, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:		2:30 WG50686
EED CD, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:		2:30 WG50686
ED CR, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:		2:30 WG50686
FED CU, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:		2:30 WG50686
<u>FED FE</u> , 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:	58 03/20/02 12	2:30 WG50686
7471					•	1	10/16/01 15:	00 10/19/01 12	2:30 WG50491
FED MN, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:	58 03/20/02 12	2:30 WG50686
EED PB, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:	58 03/20/02 12	2:30 WG50686
ED ZN, 6010		09/25/01 14:00	03/20/02 12:30	WG50685	PREP FOR	1	09/26/01 09:	58 03/20/02 12	2:30 WG50686
FED M8260 ENCORE						1	09/25/01 14:	45 10/06/01 16	5:00
Lab ID: 01092802-	3	Client ID	F-02-D-01 (M,V)	္ႏုိင္္ Co	llect Date: 09/	21/01 14:15	Rece	eive Date: 09/2	1701 17:15
OIST					•	1	09/24/01 11:	51 09/28/01 14	4:15 WG49582
FED AL, 6010		09/25/01 14:00	03/20/02 14:15	WG50685	PREP FOR	1	09/26/01 10:		4:15 WG50686
ED BA, 6010		09/25/01 14:00	03/20/02 14:15	WG50685	PREP FOR	1	09/26/01 10:		4:15 WG50686
ED CD, 6010		09/25/01 14:00	03/20/02 14:15		PREP FOR	1	09/26/01 10:		4:15 WG50686
FED CR, 6010		09/25/01 14:00	03/20/02 14:15		PREP FOR	1	09/26/01 10:		4:15 WG50686
D CU, 6010		09/25/01 14:00	03/20/02 14:15		PREP FOR	1	09/26/01 10:		4:15 WG50686
ED FE, 6010		09/25/01 14:00	03/20/02 14:15		PREP FOR	1	09/26/01 10:		4:15 WG50686
FED HG, 7471						1	10/16/01 15:		4:15 WG50491
D MN, 6010		09/25/01 14:00	03/20/02 14:15	WG50685	PREP FOR	1	09/26/01 10:	42 03/20/02 14	4:15 WG50686
ED PB, 6010	:	09/25/01 14:00	03/20/02 14:15	WG50685	PREP FOR	1	09/26/01 10:	42 03/20/02 14	4:15 WG50686
FED ZN, 6010		09/25/01 14:00	03/20/02 14:15	WG50685	PREP FOR	1	09/26/01 10:	42 03/20/02 14	4:15 WG50686
D M8260 ENCORE						1	09/25/01 14:	45 10/06/01 16	5:00

_ab ID01092802-4	Glient ID	F-03-D-01 (M,V)	C	ollect Date: 09	9/21/01 14	:00 ::: Receive	Date:09/21/01 17:15
MOIST					1	09/24/01 11:51	09/28/01 14:00 WG49582
FED AL, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
ED BA, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
ED CD, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
FED CR, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
ED CU, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
ED FE, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
FED HG, 7471					1	10/16/01 15:00	10/19/01 14:00 WG50491
ED MN, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
ED PB, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
FED ZN, 6010	09/25/01 14:00	03/20/02 14:00	WG50685	PREP FOR	1	09/26/01 10:47	03/20/02 14:00 WG50686
ED M8260 ENCORE					1	09/25/01 14:45	10/06/01 16:00
ab ID: 01092802-5	Client ID	F-04-D-01 (M,V)	C	ollect Date:::09	/21/01,15	:00 Receive	Date: 09/21/01:17:15
<b>M</b> OIST					1	09/24/01 11:51	09/28/01 15:00 WG49582
ED AL, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
FED BA, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
EED CD, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
ED CR, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
FED CU, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
EED_EE, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
. 7471		•			1	10/16/01 15:00	10/19/01 15:00 WG50491
FED MN, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
EED PB, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
ED ZN, 6010	09/25/01 14:00	03/20/02 15:00	WG50685	PREP FOR	1	09/26/01 10:51	03/20/02 15:00 WG50686
FED M8260 ENCORE					1 .	09/25/01 14:45	10/06/01 16:00
ab ID: 01092802-6	Client ID	F-05-D-01 (M,V)	Co	lect Date: 09	/21/01:14:	40 Receive	Date: 09/21/01.17/15
DIST					1	09/24/01 11:51	09/28/01 14:40 WG49582
FED AL, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
ED BA, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
D CD, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
FED CR, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
D CU, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
D FE, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
FED HG, 7471	•		•		1	10/16/01 15:00	10/19/01 14:40 WG50491
D MN, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
D PB, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
FED ZN, 6010	09/25/01 14:00	03/20/02 14:40	WG50685	PREP FOR	1	09/26/01 10:56	03/20/02 14:40 WG50686
D M8260 ENCORE					1	09/25/01 14:45	10/06/01 16:00

					**************************************		
-ab ID: 01092802-7.	Client ID	: F-06-ט-01>(M <sub>1</sub> V)	Service CC	ilect Date: 09/	21/01 15	:15 Receive	Date: > 09/21/01/1//15
MOIST					1	09/24/01 11:51	09/28/01 15:15 WG49582
FED AL, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
FED BA, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
ĘD CD, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1 .	09/26/01 11:01	03/20/02 15:15 WG50686
FED CR, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
ED CU, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
FED FE, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
<u>F</u> ED HG, 7471					1	10/16/01 15:00	10/19/01 15:15 WG50491
ED MN, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
FED PB, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
FED ZN, 6010	09/25/01 14:00	03/20/02 15:15	WG50685	PREP FOR	1	09/26/01 11:01	03/20/02 15:15 WG50686
ED M8260 ENCORE					1	09/25/01 14:45	10/06/01 16:00

**QC SUMMARY** 

#### PDC Laboratories Quality Control Summary Report

ROJECT: 01092802

S ANALYSIS (SW6010) AND PREPARATION (SW3051)

C CROSS REFERENCE REPORT

	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092802-1	F-01-D-02 (M,V)	WG50685	WG50686	26-Sep-01 09:54	DWK	SW6010B
	01092802-2	F-01-D-01 (M,V)	WG50685	WG50686	26-Sep-01 09:58	DWK	SW6010B
l	01092802-3	F-02-D-01 (M,V)	WG50685	WG50686	26-Sep-01 10:42	DWK	SW6010B
•	01092802-4	F-03-D-01 (M, V)	WG50685	WG50686	26-Sep-01 10:47	DWK	SW6010B
	01092802-5	F-04-D-01 (M,V)	WG50685	WG50686	26-Sep-01 10:51	DWK	SW6010B
_	01092802-6	F-05-D-01 (M,V)	WG50685	WG50686	26-Sep-01 10:56	DWK	SW6010B
	01092802-7	F-06-D-01 (M, V)	WG50685	WG50686	26-Sep-01 11:01	DWK	SW6010B

#### METHOD BLANK

horatori	, In.	WG49636-1	Analysis Lo	F. WCASTEE	Prep Batch:	WCARCAC	Comple Mose.
norgrory	י יעני י	MG43036-T	Analysis Lo	16: WG49/55	Prep Batch:	WG47636	Sample Tag:

Analyte	Units	value	KDL	Analysis Date
Chromium	MG/KG	2.00	2.0	26-Sep-01 09:43
Copper	MG/KG	5.0U	5.0	26-Sep-01 09:43
Lead	MG/KG	0.600	0.60	26-Sep-01 09:43
Zinc	MG/KG	4.0U	4.0	26-Sep-01 09:43

ooratory ID: WG50685-1 Analysis Lot: WG50686 Prep Batch: WG50685 Sample Tag:

-	Analyte	Units	Value	RDL	Analysis Date
	Aluminum	MG/KG	400	40	26-Sep-01 09:43
	Barium	MG/KG	40U	40	26-Sep-01 09:43
	Cadmium	MG/KG	1.00	1.0	26-Sep-01 09:43
	Chromium	MG/KG	2.00	2.0	26-Sep-01 09:43
_	Copper	MG/KG	5.0U	5.0	26-Sep-01 09:43
	Iron	MG/KG	200	20	26-Sep-01 09:43
	Manganese	MG/KG	3.00	3.0	26-Sep-01 09:43
	Lead	MG/KG	0.60U	0.60	26-Sep-01 09:43
	Zinc	MG/KG	. 4.OU	4.0	26-Sep-01 09:43

#### BORATORY CONTROL SAMPLE

oratory ID: WG49636-2 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis	Date
Chromium	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01	09:48
Copper	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01	09:48
Lead	MG/KG	25.0	24.0	98.0	80.0-120	26-Sep-01	09:48
Zinc	MG/KG	25.0	24.0	. 96.0	80.0-120	26-Sep-01	09:48

Laboratory ID: WG50685-2 Analysis Lot: WG50686 Sample Tag:

7	Analyte		Spiked		*Recovery	Limits	Analysis	
Al	luminum	MG/KG	25.0 25.0	23.0 25.0	93.0	80.0-120 80.0-120	26-Sep-01 26-Sep-01	09:48

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#### PDC Laboratories Quality Control Summary Report

#### ROJECT: 01092802

LS ANALYSIS (SW6010) AND PREPARATION (SW3051)

ABORATORY CONTROL SAMPLE

Laboratory ID: WG50685-2 Analysis Lot: WG50686 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Cadmium	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01 09:48
Chromium	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01 09:48
Copper	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01 09:48
Iron	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01 09:48
Manganese	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01 09:48
Lead	MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 09:48
Zinc	MG/KG	25.0	24.0	96 D	80 0-120	26-Sep-01 09:48

#### ATRIX SPIKE/MATRIX SPIKE DUPLICATE

aboratory IDs: WG49636-6, WG49636-7 Analysis Lot: WG49755	Sample Spiked: 01092803-1 Site: A-01-D-01 (M)	Sample Tag:
---	---	-------------

Ana	lyte Unit	Amt MS		•		MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits
Chro	mium MG/I	G 500	500	32	480	490	89.0	91.0	75.0-125	2.08	20.0
Co	pper MG/H	KG 500	500	3.4	450	470	89.0	93.0	75.0-125	4.34	20.0
	Lead MG/I	(G 500	500	31	480	500	90.0	93.0	75.0-125	3.49	20.0
-	Zinc MG/H	(G 500	500	54	490	500	88.0	88.0	75.0-125	0.00	20.0

#### boratory IDs: WG50685-3, WG50685-4 Analysis Lot: WG50686 Sample Spiked: 01092802-2 Site: F-01-D-01 (M,V) Sample Tag:

Analyte Uni		Spiked		MS Value	MSD Value	* Rec	% Rec	kec Limits	RPD	Limits	
Aluminum MG/	KG 500	500	3000	4300	7800	260	960	75.0-125	115	20.0	*
Barium MG/	KG 500	500	23	460	510	87.0	98.0	75.0-125	. 10.8	20.0	
Cadmium MG/	KG 500	500	0.50	430	450	86.0	90.0	75.0-125	4.54	20.0	
Chromium MG/	KG 500	500	24	460	480	87.2	91.2	75.0-125	4.48	20.0	
_ Copper MG/	KG 500	500	29	470	480	88.0	90.0	75.0-125	2.25	20.0	
Iron MG/	KG 500	500	19000	18000	17000	0.00	0.00	75.0-125	0.00	20.0	*
Manganese MG/	KG 500	500	1300	1600	1200	60.0	0.00	75.0-125	200	20.0	*
Lead MG/	KG 500	500	220	640	570	84.0	70.0	75.0-125	18.2	20.0	*
Zinc MG/	KG 500	500	1500	2000	1300	100	0.00	75.0-125	200	20.0	*

#### ABORATORY DUPLICATE

#### boratory ID: WG49636-8 Duplicate Sample: 01092803-1 Analysis Lot: WG49755 Sample Tag:

ı	Analyte	Units	Measured	Replicate	RPD	Limits	Analysis Date
•	Chromium	MG/KG	32	36.0	11.8	20.0	26-Sep-01 12:26
1	Copper	MG/KG	3.4	3.80	11.1	20.0	26-Sep-01 12:26
ı	Lead	MG/KG	31	33.0	6.25	20.0	26-Sep-01 12:26
1	Zinc	MG/KG	54	59.0	8.85	20.0	26-Sep-01 12:26

Laboratory ID: WG50685-5 Duplicate Sample: 01092802-2 Analysis Lot: WG50686 Sample Tag:

	Analyte	Units	Measured	Replicate	RPD	Limits	Analysis Date
	Aluminum	MG/KG	3000	3700	20.0	20.0	26-Sep-01 10:03
	Barium	MG/KG	23	25.0	8.33	20.0	26-Sep-01 10:03
	Cadmium	MG/KG	0.50	0.580	14.8	20.0	26-Sep-01 10:03
	Chromium	MG/KG	24	28.0	15.4	20.0	26-Sep-01 10:03
	Copper	MG/KG	29	31.0	6.67	20.0	26-Sep-01 10:03
	Iron	MG/KG	19000	20000	5.13	20.0	26-Sep-01 10:03
_	Manganese	MG/KG	1300	1400	7.41	20.0	26-Sep-01 10:03
	Lead	MG/KG	220	250	12.8	20.0	26-Sep-01 10:03
	Zinc	MG/KG	1500	1700	12.5	20.0	26-Sep-01 10:03

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ROJECT: 01092802

S ANALYSIS (SW6010) AND PREPARATION (SW3051)

NITIAL CALIBRATION VERIFICATION

#### INITIAL CALIBRATION VERIFICATION

Laboratory ID: WG49755-1 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	4.00	3.9	97.5	90.0-110	26-Sep-01 09:14
Copper	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01 09:14
Lead	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01 09:14
Zinc	UG/ML	4.00	3.9	97.5	90.0-110	26-Sep-01 09:14

boratory ID: WG50686-1 Analysis Lot: WG50686 Sample Tag:

Ar	alyte	Units	Spiked	Measured	*Recovery	Limits	Analysis 1	Date
7.1.	minum	UG/ML	4.00	4.1	102	90.0-110	26 6 01	
AIC	mitridin	מויו לטט	4.00	4.1	102	90.0-110	26-Sep-01	09:14
• E	Jarium	UG/ML	4.00	4.1	102	90.0-110	26-Sep-01	09:14
Ca	dmium	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01	09:14
Chr	omium	UG/ML	4.00	3.9	97.5	90.0-110	26-Sep-01	09:14
	opper	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01	09:14
	Iron	UG/ML	4.00	4.2	105	90.0-110	26-Sep-01 (	09:14
Mang	anese	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01 (	09:14
_	Lead	UG/ML	4.00	4.0	100	90.0-110	26-Sep-01	09:14
	Zinc	UG/ML	4.00	3.9	. 97.5	90.0-110	26-Sep-01 (	09:14

#### WITIAL CALIBRATION BLANK

. A						
ר	тy	ID:	WG49755-2	Analysis	Lot:	.WG49755

	Analyte	Units	Value	RDL	Analysis Date
 	Chromium	PPB	2.00	2.0	26-Sep-01 09:22
	Copper	PPB	5.0U	5.0	26-Sep-01 09:22
	Lead	PPB	0.600	0.60	26-Sep-01 09:22
	Zinc	PPR	4 011	4 n	26-Sen-01 09-22

poratory ID: WG50686-2 Analysis Lot: WG50686

Analyte	Units	Value	RDL	Analysis Date
Aluminum	UG/ML	400	40	26-Sep-01 09:22
Barium	UG/ML	40U	40	26-Sep-01 09:22
Cadmium	UG/ML	1.00	1.0	26-Sep-01 09:22
Chromium	UG/ML	2.00	2.0	26-Sep-01 09:22
Copper	UG/ML	5.0U	5.0	26-Sep-01 09:22
Iron	UG/ML	200	20	26-Sep-01 09:22
Manganese	UG/ML	3.0U	3.0	26-Sep-01 09:22
Lead	UG/ML	0.600	0.60	26-Sep-01 09:22
Zinc	UG/ML	4.0U	4.0	26-Sep-01 09:22

#### NTINUING CALIBRATION BLANK

Laboratory ID: WG49755-10 Analysis Lot: WG49755

Analyte		Value	RDL	Analysis Date
Chromium		2.00	2.0	26-Sep-01 11:41
Copper	UG/ML	5.0U	5.0	26-Sep-01 11:41

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## ROJECT: 01092802

S ANALYSIS (SW6010) AND PREPARATION (SW3051)

ONTINUING CALIBRATION BLANK

Laboratory ID: WG49755-10 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Value	RDL	Analysis Date
. Lead	UG/ML	0.600	0.60	26-Sep-01 11:41
Zinc	UG/ML	4.0U	4.0	26-Sep-01 11:41

boratory ID: WG49755-13 Analysis Lot: WG49755

	Analyte	Units	Value	RDL	Analysis Date
	Chromium	UG/ML	2.00	2.0	26-Sep-01 12:55
	Copper	UG/ML	5.0Ŭ	5.0	26-Sep-01 12:55
	Lead	UG/ML	0.600	0.60	26-Sep-01 12:55
I	Zinc	UG/ML	4.0U	4.0	26-Sep-01 12:55

aboratory ID: WG49755-16 Analysis Lot: WG49755

Analyte	Units	Value	RDL	Analysis Date
Chromium	UG/ML	2.00	2.0	26-Sep-01 13:58
Copper	UG/ML	5.0Ü	5.0	26-Sep-01 13:58
Lead	UG/ML	0.600	0.60	26-Sep-01 13:58
Zinc	TIG/MT.	4 00	4 0	26-Sep-01 13:58

Laboratory ID: WG49755-7

Analysis Lot: WG49755

	Analyte	Units	Value	RDL	Analysis Date
,	Chromium	UG/ML	2.00	2.0	26-Sep-01 10:35
	Copper	UG/ML	5.0U	5.0	26-Sep-01 10:35
	Lead	UG/ML	0.600	0.60 .	26-Sep-01 10:35
	Zinc	UG/ML	4.0U	4.0	26-Sep-01 10:35

Laboratory ID: WG50686-10

Analysis Lot: WG50686

	Analyte	Units	Value	RDL	Analysis Date
	Aluminum	UG/ML	400	40	26-Sep-01 11:41
	Barium	UG/ML	4 0 U	40	26-Sep-01 11:41
_	Cadmium	UG/ML	1.00	1.0	26-Sep-01 11:41
	Chromium	UG/ML	2.00	2.0	26-Sep-01 11:41
	Copper	UG/ML	5.00	5.0	26-Sep-01 11:41
	Iron	UG/ML	20U	20	26-Sep-01 11:41
	Manganese	UG/ML	3.00	3.0	26-Sep-01 11:41
	Lead	UG/ML	0.600	0.60	26-Sep-01 11:41
8	Zinc	UG/ML	4.0U	4.0	26-Sep-01 11:41

Laboratory ID: WG50686-7 Analysis Lot: WG50686

	Analyte	Units	Value	RDL	Analysis Date
	Aluminum	UG/ML	400	40	26-Sep-01 10:35
-	Barium	UG/ML	4 0 U	40	26-Sep-01 10:35
	Cadmium	UG/ML	1.00	1.0	26-Sep-01 10:35
	Chromium	UG/ML	2.00	2.0	26-Sep-01 10:35
	Conner	DC:/MT.	5 011	5.0	26-Sep-01 10.35

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#### PDC Laboratories Quality Control Summary Report

ROJECT: 01092802

ANALYSIS (SW6010) AND PREPARATION (SW3051)

NTINUING CALIBRATION BLANK

Laboratory ID: WG50686-7 Analysis Lot: WG50686 Sample Tag:

	Analyte	Units	Value	RDL	Analysis Date
	Iron	UG/ML	200	20	26-Sep-01 10:35
<del></del>	Manganese		3.00	3.0	26-Sep-01 10:35
_	Lead	UG/ML	0.600	0.60	26-Sep-01 10:35
	Zinc	UG/ML	4.0U	4.0	26-Sep-01 10:35

INTERFERENCE CHECK SAMPLE - A

poratory ID: WG50686-3 Analysis Lot: WG50686

Analyte	Units	Spiked	Measured	*Recovery	Limits	Date
 Aluminum		500	484.19		80.0-120	26-Sep-01 09:27
Iron	UG/ML	200	199.69	99.8	80.0-120	26-Sep-01 09:27

Laboratory ID: WG49755-3 Analysis Lot: WG49755

4	Analyte	Units	Spiked	Measured	%Recovery	Limi	ts I	Date
<b>19</b>	Chromium Copper	UG/ML UG/ML	0.0	-0.00078	N/A N/A	N/A N/A	26-Sep-01 09:27 26-Sep-01 09:27	
	Lead Zinc	UG/ML UG/ML	0.0 0.0	-0.0014 -0.013	N/A N/A	N/A N/A	26-Sep-01 09:27 26-Sep-01 09:27	

Laboratory ID: WG50686~3 Analysis Lot: WG50686

	Analyte	Units	Spiked	Measured	*Recovery	Limit	S	Date
	Barium	UG/ML	0.0	-0.00058	N/A	N/A	26-Sep-01	09:27
1	Cadmium	UG/ML	0.0	-0.0051	N/A	N/A	26-Sep-01	09:27
_ c	hromium	UG/ML	0.0	-0.00078	N/A	N/A	26-Sep-01	09:27
	Copper	UG/ML	0.0	-0.0042	N/A	N/A	26-Sep-01	09:27
Ma:	nganese	UG/ML	0.0	-0.0022	N/A	N/A	26-Sep-01	09:27
•	Lead	UG/ML	0.0	-0.0014	N/A	N/A	26-Sep-01	09:27
	Zinc	UG/ML	0.0	-0.013	N/A	N/A	26-Sep-01	09:27

TERFERENCE CHECK SAMPLE - AB

Laboratory ID: WG49755-4 Analysis Lot: WG49755

Ļ	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
•	Chromium	UG/ML	0.50	0.48	96.2	80.0-120	26-Sep-01 09:32
	P Copper	UG/ML	0.50	0.55	110	80.0-120	26-Sep-01 09:32
1	Lead	UG/ML	0.050	0.047	93.8	80.0-120	26-Sep-01 09:32
J	Zinc	UG/ML	1.0	0.93	93.0	80.0-120	26-Sep-01 09:32

Laboratory ID: WG50686-4 Analysis Lot: WG50686

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Aluminum	UG/ML	500	521.36	104	80.0-120	26-Sep-01 09:32
	Barium	UG/ML	0.50	0.53	106	80.0-120	26-Sep-01 09:32
i	Cadmium	UG/ML	1.0	0.97	97.4	80.0-120	26-Sep-01 09:32
	Chromium	UG/ML	0.50	0.48	96.2	80.0-120	26-Sep-01 09:32
	Copper	UG/ML	0.50	0.55	110	80.0-120	26-Sep-01 09:32
	Iron	UG/ML	200	216.32	108	80.0-120	26-Sep-01 09:32
	Manganese	UG/ML	0.50	0.50	99.1	80.0-120	26-Sep-01 09:32

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ROJECT: 01092802

S ANALYSIS (SW6010) AND PREPARATION (SW3051)

NTERFERENCE CHECK SAMPLE - AB

Laboratory ID: WG50686-4 Analysis Lot: WG50686

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date	
Lead	UG/ML	0.050	0.047	93.8	80.0-120	26-Sep-01 09:32	
Zinc	UG/ML	1.0	0.93	93.0	80.0-120	26-Sep-01 09:32	

#### ONTINUING CALIBRATION VERIFICATION

<u>La</u>boratory ID: WG49755-12 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 12:50
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50

Laboratory ID: WG49755-15 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 13:54
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54

Laboratory ID: WG49755-6 Analysis Lot: WG49755 Sample Tag:

•	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30
	Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30
•	Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 10:30
	Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30

aboratory ID: WG49755-9 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Lead	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36

poratory ID: WG50686-6 Analysis Lot: WG50686 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
*****			4.0	100	00 0 110	26 6 01 10 20
Aluminum	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30
Barium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 10:30
Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 10:30
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30
Iron	UG/ML	4.0	4.2	105	90.0-110	26-Sep-01 10:30
Manganese	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 10:30
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 10:30
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30

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ROJECT: 01092802

### ALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

ONTINUING CALIBRATION VERIFICATION

Laboratory ID: WG50686-9 Analysis Lot: WG50686 Sample Tag:

Analyte	Units	Spiked	Measured	Recovery	Limits	Analysis Date
Aluminum	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Barium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 11:36
Cadmium	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 11:36
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Iron	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 11:36
Manganese	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Lead	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36

#### POST DIGESTION SPIKE

Laboratory ID: WG49755-14 Analysis Lot: WG49755

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	5.00	5.1	103	75.0-125	26-Sep-01 13:17
 Copper	UG/ML	5.00	5.0	100	75.0-125	26-Sep-01 13:17
Lead	UG/ML	5.00	5.2	104	75.0-125	26-Sep-01 13:17
Zinc	UG/ML	5.00	5.3	106	75.0-125	26-Sep-01 13:17

Coratory ID: WG50686-8 Analysis Lot: WG50686

Analyt	e Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Aluminu	n UG/ML	5.00	35.	100	75.0-125	26-Sep-01 11:11
Bariu	m UG/ML	5.00	5.2	99.0	75.0-125	26-Sep-01 11:11
Cadmiu	n UG/ML	5.00	4.9	98.0	75.0-125	26-Sep-01 11:11
Chromiu	n UG/ML	5.00	5.2	104	75.0-125	26-Sep-01 11:11
Coppe	r UG/ML	5.00	5.3	106	75.0-125	26-Sep-01 11:11
Iro	n UG/ML	5.00	190	0.00	75.0-125	26-Sep-01 11:11
Manganes	e UG/ML	5.00	17.	89.0	75.0-125	26-Sep-01 11:11
Lea	d UG/ML	5.00	6.9	94.0	75.0-125	26-Sep-01 11:11
Zin	UG/ML	5.00	20.	100	75.0-125	26-Sep-01 11:11

#### PDC Laboratories Quality Control Summary Report

ROJECT: 01092802

ALS ANALYSIS (SW7471) AND PREPARATION (SW7471A)

C CROSS REFERENCE REPORT

<b>,</b>	Lab ID	Client ID	Prep. Lot Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092802-1	F-01-D-02 (M,V)	WG50491	16-Oct-01 15:00	ERS	SW7471A
	01092802-2	F-01-D-01 (M,V)	WG50491	16-Oct-01 15:00	ERS	SW7471A
·	01092802-3	F-02-D-01 (M,V)	WG50491	16-Oct-01 15:00	ERS	SW7471A
•	01092802-4	F-03-D-01 (M,V)	WG50491	16-Oct-01 15:00	ERS	SW7471A
	01092802-5	F-04-D-01 (M,V)	WG50491	16-Oct-01 15:00	ERS	SW7471A
	01092802-6	F-05-D-01 (M,V)	WG50491	16-Oct-01 15:00	ERS	SW7471A
	01092802-7	F-06-D-01 (M,V)	WG50491	16-Oct-01 15:00	ERS	SW7471A

#### METHOD BLANK

boratory ID: WG50491-1 Analysis Lot: WG50789 Sample Tag: WG50491

Analyte Units Value RDL Analysis Date

Mercury MG/KG 0.040U 0.040 27-Sep-01 13:23

#### LABORATORY CONTROL SAMPLE

boratory ID: WG50491-2 Analysis Lot: WG50789 Sample Tag:

Analyte Units Spiked Measured Recovery Limits Analysis Date

Mercury MG/KG 0.333 0.340 102 80.0-120 27-Sep-01 13:25

#### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Moratory IDs: WG50491-3, WG50491-4 Analysis Lot: WG50789 Sample Spiked: 01092802-2 Site: F-01-D-01 (M,V) Sample Tag:

Amt MS Amt MSD Sample MS MSD MS MSD Rec RPD
Analyte Units Spiked Spiked Value Value Value % Rec % Rec Limits RPD Limits

Mercury MG/KG 0.33 0.33 0.014 0.35 0.36 105 108 75.0-125 2.82 20.0

#### NITIAL CALIBRATION VERIFICATION

Laboratory ID: WG50789-1 Analysis Lot: WG50789 Sample Tag:

Analyte Units Spiked Measured Recovery Limits Analysis Date

Mercury UG/L 5.00 5.0 100 90.0-110 27-Sep-01 13:12

#### NITIAL CALIBRATION BLANK

Laboratory ID: WG50789-2 Analysis Lot: WG50789

Analyte Units Value RDL Analysis Date

Mercury UG/L 0.040U 0.040 27-Sep-01 13:15

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## ROJECT: 01092802

## S ANALYSIS AND PREPARATION (SW7471A)

ONTINUING CALIBRATION BLANK

## CONTINUING CALIBRATION BLANK

Laboratory ID: WG50789	-4	Analysis	Lot: WG	50789			
	Analyte	Units	Value	RDL	Ana	lysis Date	
					27-Sep-	01 13:53	
Laboratory ID: WG50789	-6	Analysis	Lot: WG	50789			
	Analyte	Units	Value	RDL	Ana	lysis Date	
	Mercury	UG/L	0.040U	0.040	27-Sep-	01 14:27	
boratory ID: WG50789	-8	Analysis	Lot: WG	50789			
	Analyte	Units	Value	RDL	Ana	lysis Date	
<b>•••••</b>	Mercury	UG/L	0.040U	0.040	27-Sep-	01 14:58	
ONTINUING CALIB	RATION	VERIFIC	CATION				
poratory ID: WG50789	-3 Ana	lysis Lot:	WG50789	Sample T	Tag:		
	Analyte	Units	Spiked	Measured	%Recovery	Limits	Analysis Date
	Mercury	UG/L	5.0	5.0	100	80.0-120	27-Sep-01 13:50
oratory ID: WG50789	-5 Ana	lysis Lot:	WG50789	Sample T	ag:	•	•
_	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
,	Mercury	UG/L	5.0	5.0	100	80.0-120	27-Sep-01 14:24
Laboratory ID: WG50789	-7 Ana	lysis Lot:	WG50789	Sample T	ag:		
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Mercury	UG/L	5.0	5.0	100	80.0-120	27-Sep-01 14:56

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## PDC Laboratories Quality Control Summary Report

ROJECT: 01092802

TILE ORGANICS BY GC/MS (SW8260)

C CROSS REFERENCE REPORT

<b>j</b>	Lab ID	Client ID	Prep. Lot Analysis Lot	Analysis Date	Analyst	Method	Sample Tag
_	01092802-1	F-01-D-02 (M,V)	WG49649	25-Sep-01 19:04	PSB	SW8260B/SW5035	D1:1
b	01092802-2	F-01-D-01 (M,V)	WG49649	25-Sep-01 14:45	PSB	SW8260B/SW5035	D1:1
ŀ	01092802-3	F-02-D-01 (M,V)	WG49649	25-Sep-01 19:36	PSB	SW8260B/SW5035	D1:1
	01092802-4	F-03-D-01 (M,V)	WG49649	25-Sep-01 16:55	PSB	SW8260B/SW5035	D1:1
	01092802-5	F-04-D-01 (M,V)	WG49649	25-Sep-01 17:27	PSB	SW8260B/SW5035	D1:1
ė .	01092802-5	F-04-D-01 (M,V)	WG49649	25-Sep-01 20:41	PSB	SW8260B/SW5035	D1:R2
	01092802-6	F-05-D-01 (M,V)	WG49649	25-Sep-01 17:59	PSB	SW8260B/SW5035	D1:1
	01092802-7	F-06-D-01 (M,V)	WG49649	25-Sep-01 18:32	PSB	SW8260B/SW5035	D1:1

#### METHOD BLANK

Laboratory ID: WG49649-1 Analysis Lot: WG49649 Prep Lot: N/A Sample Tag: D1:1

	Analyte	Units	Value	RDL	Analysis Date
	1,1-Dichloroethane	UG/KG	5.0U	5.0	25-Sep-01 12:17
	trans-1,2-Dichloroethene	UG/KG	5.0U	5.0	25-Sep-01 12:17
	Trichloroethene	UG/KG	5.0U	5.0	25-Sep-01 12:17
i	m/p-Xylene	UG/KG	5.0V	5.0	25-Sep-01 12:17
	o-Xylene	UG/KG	5.0U	5.0	25-Sep-01 12:17
ŀ	Total xvlenes	UG/KG	1 013	10	25-Sep-01 12:17

## ABORATORY CONTROL SAMPLE

Laboratory ID: WG49649-2 Analysis Lot: WG49649 Sample Tag: D1:1

Analyte		-		%Recovery	Limits	<b>-</b>
1,1-Dichloroethane					70.0-130	25-Sep-01 12:50
Trichloroethene	tic/kG	20.0	18 0	90.0	70 0-130	25-Sep-01 12:50

## ATRIX SPIKE/MATRIX SPIKE DUPLICATE

eboratory IDs: WG49649-3, WG49649-4 Analysis Lot: WG49649 Sample Spiked: 01092802-2 Client ID: F-01-D-01 (M,V) Sample Tag: D1

			Amt MS	Amt MSD	Sample	MS	MSD	MS	MSD	Rec		RPD	
	Analyte		Spiked	Spiked	Value	Value	Value	% Rec	* Rec	Limits	RPD	Limits	
	Trichloroethene	UG/KG	31.2	31.2	5.00	38	28	122	89.6	70.0-130	30.6	30.0	*
<b>a</b>	1,1-Dichloroethane	UG/KG	31.2	31.2	5.00	44	32	141	102	70.0-130	32.1	30.0	*

#### CONTINUING CALIBRATION VERIFICATION

boratory ID: WG49649-5 Analysis Lot: WG49649 Sample Tag: D1:1

_	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	1,1-Dichloroethane	UG/L	20	19	95.0	70.0-130	25-Sep-01 11:27
	trans-1,2-Dichloroethene	UG/L	20	20	100	70.0-130	25-Sep-01 11:27
	Trichloroethene	UG/L	20	19	95.0	70.0-130	25-Sep-01 11:27
	m/p-Xylene	UG/L	40	36	90.0	70.0-130	25-Sep-01 11:27
	o-Xylene	UG/L	20	18	90.0	70.0-130	25-Sep-01 11:27
	Total xylenes	UG/L	60	55	92.0	70.0-130	25-Sep-01 11:27

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## ROJECT: 01092802

DITINUING CALIBRATION VERIFICATION

Laboratory ID: WG49649-5 Analysis Lot: WG49649 Sample Tag: D1:1

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1,2-Dichloroethane-de		UG/L	30	28	93.0	70.0-121	25-Sep-01 11:27
Toluene-di	B (SURR)	UG/L	30	27	90.0	81.0-117	25-Sep-01 11:27
Bromofluorobenzen	e (SURR)	UG/L	30	27	90.0	60.0-155	25-Sep-01 11:27
JRROGATE RECOVE	RIES						
_							

boratory ID: 01092802	2-1 A	nalysis	Lot: WG49649	Client	ID: F-01-E	0-02	(M, V)	Sample Tag: D1:1
	Analyte	Units	Spiked	Measured	*Recovery		Limits	Analysis Date
1,2-Dichloroethane-d4	(SURR)	UG/KG	30.0	34.0	113	70	.0-149	25-Sep-01 19:04
Toluene-da	(SURR)	UG/KG	30.0	36.0	120	72	.0-128	25-Sep-01 19:04
Bromofluorobenzene	(SURR)	UG/KG	30.0	38.0	127	60	.0-155	25-Sep-01 19:04
aboratory ID: 01092802	:-2 A	nalysis	Lot: WG49649	Client	ID: F-01-D	-01	(M, V)	Sample Tag: D1:1
	Analyte	Units	Spiked	Measured	*Recovery		Limits	Analysis Date
1,2-Dichloroethane-d4	(SURR)	UG/KG	30.0	46.0	153	70	.0-149	25-Sep-01 14:45
Toluene-d8	(SURR)	UG/KG	30.0	36.0	120	72	.0-128	25-Sep-01 14:45
Bromofluorobenzene	(SURR)	UG/KG	30.0	40.0	133	60	.0-155	25-Sep-01 14:45
oratory ID: 01092802	-3 Aı	nalysis	Lot: WG49649	Client	ID: F-02-D	-01	(M, V)	Sample Tag: D1:1
	Analyte	Units	Spiked	Measured	*Recovery		Limits	Analysis Date
chloroethane-d4	(SURR)	UG/KG	30.0	35.0	117	70	.0-149	25-Sep-01 19:36
Toluene-d8		UG/KG	30.0	37.0	123		.0-128	25-Sep-01 19:36
Bromofluorobenzene		UG/KG	30.0	39.0	130		0-155	25-Sep-01 19:36
oratory ID: 01092802	-4 A	nalysis	Lot: WG49649	Client	ID: F-03-D	-01	(M, V)	Sample Tag: D1:1
	Analyte	Units	Spiked	Measured	*Recovery		Limits	Analysis Date
1,2-Dichloroethane-d4	(SURR)	UG/KG	30.0	25.0	83.0	70.	0-149	25-Sep-01 16:55
Toluene-d8	(SURR)	UG/KG	30.0	22.0	73.0	72.	0-128	25-Sep-01 16:55
Bromofluorobenzene	(SURR)	UG/KG	30.0	26.0	87.0	60.	0-155	25-Sep-01 16:55
aboratory ID: 01092802	-5 Ar	nalysis	Lot: WG49649	Client	ID: F-04-D	-01	(M, V)	Sample Tag: D1:1
	Analyte	Units	Spiked	Measured	*Recovery		Limits	Analysis Date
Bromofluorobenzene	(SURR)	UG/KG	30.0	26.0	86.7	60.	0-155	25-Sep-01 17:27
1,2-Dichloroethane-d4		UG/KG	30.0	25.0	83.3		0-149	25-Sep-01 17:27
Toluene-d8		UG/KG	30.0	20.0	66.6		0-128	25-Sep-01 17:27
oratory ID: 01092802	-5 <b>A</b> r	alysis	Lot: WG49649	Client	ID: F-04-D	-01	(M, V)	Sample Tag: D1:R2
• ;	Analyte	Units	Spiked	Measured	*Recovery		Limits	Analysis Date
0 Dieblemenber- 34	/CVTDD \		30.0	30.0	120		0.140	25 6 01 00 41
,2-Dichloroethane-d4	(SURR)	UG/KG	30.0	39.0	130	70.	0-149	25-Sep-01 20:41

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## ROJECT: 01092802

ILE ORGANICS BY GC/MS (SW8260)

TITE ONGWITCH	, ,, ,,	10,140	(5,40200)					
WURROGATE RECOVER	RIES							
Toluene-d8			30.0			72.0-128	•	
Bromofluorobenzene	(SURR)	UG/KG	30.0	41.0	137	60.0-155	25-Sep-01 20:	41
aboratory ID: 01092802	-6 Aı	nalysis 1	Lot: WG49649	Clien	t ID: F-05-I	0-01 (M,V)	Sample Tag: D1:1	
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Dat	e
1,2-Dichloroethane-d4	(SURR)	UG/KG	30.0	27.0	90.0	70.0-149	25-Sep-01 17:	59
Toluene-d8	(SURR)	UG/KG		28.0		72.0-128	25-Sep-01 17:	59
<pre>Bromofluorobenzene</pre>	(SURR)	UG/KG	30.0	35.0	117	60.0-155	25-Sep-01 17:	59
Laboratory ID: 01092802	-7 <b>A</b> r	nalysis 1	Lot: WG49649	Client	ID: F-06-D	0-01 (M,V)	Sample Tag: D1:1	
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Dat	e -
1,2-Dichloroethane-d4	(SURR)	UG/KG	30.0	23.0	77.0	70.0-149	25-Sep-01 18:	32
Toluene-d8	(SURR)	UG/KG	30.0	27.0 36.0	90.0	72.0-128		
Bromofluorobenzene	(SURR)	UG/KG	30.0	36.0	120	60.0-155	25-Sep-01 18:	32
Laboratory ID: WG49649-	1 Ana	alysis Lo	ot: WG49649	Client	ID: MB Sa	mple Tag: D	1:1	
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date	e
1,2-Dichloroethane-d4				28.0	93.3	70.0-149	25-Sep-01 12:	- 17
Toluene-d8			30.0			72.0-128	25-Sep-01 12:	17
Bromofluorobenzene	(SURR)	UG/KG	30.0	31.0	103	60.0-155	25-Sep-01 12:	17
boratory ID: WG49649-	2 Ana	lysis Lo	ot: WG49649	Client	ID: LCS S	ample Tag:	D1:1	
j.	Analyte	Units	Spiked	Measured	%Recovery	Limits	Analysis Date	e -
ichloroethane-d4	(SURR)	UG/KG	30.0	28.0	93.3	70.0-149	25-Sep-01 12:	50
Toluene-d8	(SURR)	UG/KG		28.0	93.3	72.0-128		
Bromofluorobenzene	(SURR)	UG/KG	30.0	27.0	90.0	60.0-155	25-Sep-01 12:	50
Laboratory ID: WG49649-	3 Ana	lysis Lo	ot: WG49649	Client	ID: MS Sa	mple Tag: D	1:1	
7	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date	2
1,2-Dichloroethane-d4	(SURR)	UG/KG	30.0	58.0	193	70.0-149	25-Sep-01 15:3	17 *
Toluene-d8	(SURR)	UG/KG	30.0 30.0	48.0	160	72.0-128	25-Sep-01 15:	
Bromofluorobenzene	(SURR)	UG/KG	30.0	56.0	187	60.0-155	25-Sep-01 15:	L7 *
Laboratory ID: WG49649-4	. Ana	lysis Lo	t: WG49649	Client	ID: MSD S	ample Tag: 1	D1:1	
<b>1</b>	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date	•
1,2-Dichloroethane-d4	(SURR)		30.0	46.0	153	70.0-149	25-Sep-01 15:5	50 <b>*</b>
Toluene-d8		UG/KG	30.0	42.0		72.0-128	25-Sep-01 15:5	
							_	

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PDC Laboratories Quality Control Summary Report

ROJECT: 01092802

TILE ORGANICS BY GC/MS (SW8260)

URROGATE RECOVERIES

Bromofluorobenzene (SURR) UG/KG 30.0 42.0 140 60.0-155 25-Sep-01 15:50

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**SHIPPING & RECEIVING** 

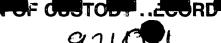
JOSEPH DRIE 2231 Wast ALTORFER DRIVE PEORIA, 61615

1901-

1900

PHONE # 309-692-9688 FAX # 309-692-9689





ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) PROJECT NUMBER P.O. NUMBER MEANS SHIPPED (FOR LAB USE ONLY) ANALYSIS REQUESTED KEYSTONE 19718 09 PICK-UP PHONE NUMBER DATE SHIPPED FAX NUMBER 5010 STONE MILL RA 812-336-0972 9-21-01 OTTY STATE ZIP BloomINGTON, IN 47404 LAB PROJ. # SAMPLER MATRIX TYPES: (PLEASE PRINT) TEMPLATE: WW-WASTEWATER JAD DW-DRINKING WATER GW-GROUND WATER PROJ. MGR.: SAMPLER'S WWSL-SLUDGE SIGNATURE Du NAS-SOLID BOB ATEN OTHER: SEPINET SAMPLE TYPE GRAB COMP MATRIX TOTAL # SAMPLE DESCRIPTION COLLECTED COLLECTED TYPE OF CONT 2801 POND TRIPBIANK 9-21-01 07:00 Wil X 10:10 9-21-01 WIR X 9-21-01 10:10 WIR Extra Val for × 21 9-21-01 12:30 × WIT MS/MSD 4 X 9-21-01 12:30 wil 9-21-01 × X צדעו 12:30 X 7-21-01 χ らぎり EXTRA VOL FOR X SED 12 × 9-21-01 12:30 MS/MSD X 5-21-01 X 14:15 **≤**=0 14:00 7-21-01 X 经9 X 15-21-01 V5:00 X X 500 F2101 14:40 F-05-D-0 X 550 NV TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH The sample temperature will be measured upon receipt at the lab. By initialing (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) this area you request that the lab notify you, before proceeding with analysis, if 6 the sample temperature is outside of the range of 0.1-6.0°C. By not initialing 2802 RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE this area you allow the lab to proceed with analytical testing regardless of the sample temperature. FAX # IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE: RELINQUISHED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE) COMMENTS: (FOR LAB USE ONLY) DATE DATE 9-21-01 TIME TIME 16:30 SAMPLE TEMPERATURE UPON RECEIPT RELINQUISHED BY: (SIGNATURE) DATE RECEIVED AT LAB BY: (SIGNATURE) CHILL PROCESS STARTED PRIOR TO RECEIPT YOR N YOR N YOR N OR N SAMPLE(S) RECEIVED ON ICE BOTTLES RECEIVED IN GOOD CONDITION TIME BOTTLES FILLED WITH ADEQUATE VOLUME

MOR:N

SAMPLES RECEIVED WITHIN HOLD TIME(S)

PD OR JOHN ORIE OF IC. 2231 WAT ALTORFER DRIVE PEORIA, 12 61615

PHONE # 309-692-9688 FAX # 309-692-9689

PROJECT NUMBER



P.O. NUMBER

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

MEANS SHIPPED

ANALYSIS REQUESTED



921011A BB	<b>1</b> 0/
(FOR LAB USE ONLY)  LOGIN #	
LOGGED BY:	
TEMPLATE:	
PROJ. MGR.:	

19718.07 PHONE NUMBER **FAX NUMBER** DATE SHIPPED 5010 STONEMIL ROAD

OUTV
STATE
STATE
STOOMING-TON, IN 47408 812-336-0972 SAMPLER MATRIX TYPES: (PLEASE PRINT) WW-WASTEWATER JASI RAA DW-DRINKING WATER GW-GROUND WATER SAMPLER'S WWSL-SLUDGE NAS-SOLID BUB ATEN SIGNATURE OTHER SED IN SAMPLE TYPE GRAB | COMP DATE TIME MATRIX TOTAL # SAMPLE DESCRIPTION REMARKS COLLECTED COLLECTED TYPE OF CONT F- POND 4 F-06-D-01 /mv) 9-21-01 15:15 529 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH The sample temperature will be measured upon receipt at the lab. By initialing (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) 5 this area you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE this area you allow the lab to proceed with analytical testing regardless of the sample temperature. FAX # IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE: DATE RECEIVED BY: (SIGNATURE) COMMENTS: (FOR LAB USE ONLY) DATE 9-21-01 8 ph a. Duvelius TIME TIME 16.36 SAMPLE TEMPERATURE UPON RECEIPT RELINOUSHED BY: (SIGNATURE) DATE RECEIVED AT LAB BY: (SIGNATURE) DATE CHILL PROCESS STARTED PRIOR TO RECEIPT YOR N SAMPLE(S) RECEIVED ON ICE Y OR N **BOTTLES RECEIVED IN GOOD CONDITION** Y OR:N TIME BOTTLES FILLED WITH ADEQUATE VOLUME Y OR N SAMPLES RECEIVED WITHIN HOLD TIME(S) Y OR:N

## PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section.

livery Method:	Drop Off	Commerical	Carrier (UPS,	FEDEX, etc.)	$\mathcal{C}$	Laboratory Pick-Up
Project Earth	Tech / Ke	ys tone	Cooler _	of	2	
	al $l$ :		Shipping	Container #d	PDC DOthe	r):
Received (date time)_	91 <b>3</b> 1101	1715		By:		
Opened (If different)	<del>- 111</del>			By:	7	
- F						
Preliminary Examina	tion Checklist					
Did the shipping contain	iner arrive with an	sir hill/shinr	ning slin?			YES NO (NA')
If YES, carrier name &		an ombamp	and anh	******************	****************	ILO NO (NA)
(Place any shipping do		o foldor)		<del> </del>		•
(Flace any simpling do	cumentation in th	e roider)				
Wasa austa de acala au	. بادگر این این این این این این این این این این	-1-1	4-:0			ATTO NOT
Were custody seals on						YES" NO*
If YES, a: Were the cus	stody seals intact i	ipon arrival?.			•••••	YES NO*
b: Enter the Sea	al Date and Name	(enter "NA"	' if not availa	ble): <i>9 21</i> _		
				-		
Was the Chain of Custo	ody (COC) docum	entation prov	ided with the	shipment?		(YES')NO*
If YES, a: Was the CO	C fully executed in	n ink by the s	hipper?	******		(YES) NO*
b: COC #: 9	21011 one	L 921011	A RINGL	. /		
c: Was the proj	ect identifiable fro	om the COC?	11 240 1/2	4/0/		(YES) NO*
	was this determine					(110)110
						YES) NO*
d: was the CO	C properly signed	as received b	y the Labora	tory	••••••	YES NOT
		11 0_	_			:
at was the temperate						
Were samples received						YES (NO)
(Processed Wat	ter/Wastewater are	e excluded fro	om the tempe	rature criteria	.)	
Did the cooler contain I	ce?			*****************		YES)NO*
Sample Examination	& Check-In Chec	klist				
						_
Were samples packaged	in conformance	to generally a	ccepted pract	tices?		YES NO*
			• •			
Did all sample containe	rs arrive intact an	d sealed?				(YES NO*
Did all sample containe						(YES) NO*
	iners possessed ta				***************************************	(LES) NO
						VES NO*
Were caps of individual						
Did all labels and/or tag	s agree with COC	:7				YES) NO*
					·	
Were QC samples inclu	ded?			•••••		(YEŠ) NO
Did pH checks confirm	indicated preserva	ations? (if ap	plicable)			YES NO (NA)
Did volumes, containers						VES) NO*
Were VOA vials (water						YES NO* NA
112 1332 (200)	-,	- \FF	7			
If any NO*, Proceed wi	th Login (VES / N	IO) Project	Manager		Date:	
ir any ivo , i rocced wi	th Dogin ( LD3 / I	io, Hoject	.vialiagei		_ Dato	
mails/Commonts						
ails/Comments:						
<del>-</del>	<del></del>	· · · · · · · · · · · · · · · · · · ·				
			<del></del>	<del></del>		

# Appendix L East Pond Soil/Sediment Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092803

November 7, 2001

Earth Tech

Project: East Pond/Soils

SDG #01092803

TABLE OF CONTENTS

## TABLE OF CONTENTS SDG #01092803

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QC Summary	_07
Shipping and Receiving	

**CASE NARRATIVE** 



## PDC Laboratories, Inc.

P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

## CASE NARRATIVE – Earth Tech/Keystone

East Pond - Soils Project No. 19718.09

PDC Laboratories, Inc. received 5 soil samples on September 21, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092803 for Total Metals analysis.

Sampl	e Id's	Date			
Field	Lab	Collected	Received		
A-01-D-01 (M)	01092803-1	09/21/01	09/21/01		
A-01-D-02 (M)	01092803-2	09/21/01	09/21/01		
A-02-D-01 (M)	01092803-3	09/21/01	09/21/01		
A-03-D-01 (M)	01092803-4	09/21/01	09/21/01		
A-04-D-01 (M)	01092803-5	09/21/01	09/21/01		

## **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by Method SW846 6010.

## Metals QC Summary

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092803-1 for the total metal analyses. All recoveries were within the specified QC limits.

The associated Sample Duplicate was performed on sample 01092803-1 for the total metal analyses. All recoveries were within the specified QC limits.





## PDC Laboratories, Inc.

P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria.

All Interference Check Samples were within QC criteria.

## Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Barliana B	Pen L Name:	Barbara Beard
Date:	Nov 7, 2	ool Title:	Project Manager

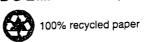
EAR01092803.poc



# PDC Laboratories, Inc. DATA QUALIFIERS

A	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
С	The batch control sample failed to meet the required acceptance criteria.
E	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
K	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
S	Surrogate compound diluted below a reliable quantitation level.
T	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery failed to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
NR	Not requested.
X	Miscellaneous; see comments.

PDC Laboratories, Inc.



TABULATED RESULTS



## PDC Laboratories, Inc.

P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



		ry Sample No.: nt Description:	01092803-1 205746	01092803-2 205746	01092803-3 11 <i>4</i> 93 <b>4</b> 91
Method		Site/Locator: Date Collected:	A-01-D-01 (M) 21-SEP-01 11:15:00 undiluted	A-01-D-02 (M) 21-SEP-01 11:20:00 undiluted	A-02-D-01 (M) 21-SEP-01 12:05:00 undiluted
	Chromium	mg/kg	32	34	34
SW6010B	Copper	mg/kg	3.4 J	3.5 J	5.2
SW6010B	Lead	mg/kg	31	35	38
6W6010B	Zinc	mg/kg	54	56	64
SW6010B	Chromium	mg/kg Dry	70	62	83
SW6010B	Copper	mg/kg Dry	7.4 J	6.4 J	13
W6010B	Lead	mg/kg Dry	67	64	93
SW6010B	Zinc	mg/kg Dry	120	100	160
SM (18) 2540B	Moisture	%	54	45	59

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State of Illinois Chemical Analysis in Drinking Water Certified Lab. No. 100230

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Method	Client	Sample No.: t Description: Site/Locator: ate Collected:	01092803-4 205746 A-03-D-01 (M) 21-SEP-01 11:45:00 undiluted	01092803-5 205746 A-04-D-01 (M) 21-SEP-01 11:30:00 undiluted	
SW6010B	Chromium	mg/kg	26	23	
SW6010B	Copper	mg/kg	9.1	6.3	
SW6010B	Lead	mg/kg	49	24	
SW6010B	Zinc	mg/kg	140	59	
SW6010B	Chromium	mg/kg Dry	59	58	
SW6010B	Copper	mg/kg Dry	- 21	16	
SW6010B	Lead	mg/kg Dry	110	60	
SW6010B	Zinc	mg/kg Dry	320	150	
SM (18) 2540B	Moisture	%	56	60	

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11/07/01

DATES & DILUTIONS REPORT

	Dil.							Analyia Hald	Amaluaia
•	Factor	Measure Dat	Hold Date	Batch ID	Assoc.Code	Dil. Factor	Analysis Dat	Analyis Hold Date	Analysis Batch
Lab ID: 0109280	<b>3-1</b>	Client ID	A-01-D-01 (M)	refress Co	ollect Date:09/	21/01/11/1	5- Rec	eive Date: ; 09	/21/01/17-15
MOIST						1	09/24/01 11:	51 09/28/01	11:15 WG49582
FED CR, 6010		09/25/01 14:00	03/20/02 11:15	WG49636	PREP FOR	1	09/26/01 11:	26 03/20/02	11:15 WG49755
FED CU, 6010		09/25/01 14:00	03/20/02 11:15	WG49636	PREP FOR	1	09/26/01 11:	26 03/20/02	11:15 WG49755
FED PB, 6010		09/25/01 14:00	03/20/02 11:15	WG49636	PREP FOR	1	09/26/01 11:	26 03/20/02	11:15 WG49755
_FED ZN, 6010		09/25/01 14:00	03/20/02 11:15	WG49636	PREP FOR	1	09/26/01 11:	26 03/20/02	11:15 WG49755
Lab ID:0109280	3 <b>-2</b>	Client ID	A-01-D-02 (M) //	્રે ્રેક Co	ollect Date:09/	21/01:11:2	0 Rec	eive Date: 09/	/21/01/17/15
MOIST						1	09/24/01 11:	51 09/28/01	11:20 WG49582
FED CR, 6010		09/25/01 14:00	03/20/02 11:20	WG49636	PREP FOR	1	09/26/01 12:	45 03/20/02	11:20 WG49755
FED CU, 6010		09/25/01 14:00	03/20/02 11:20	WG49636	PREP FOR	1	09/26/01 12:	45 03/20/02	11:20 WG49755
FED PB, 6010		09/25/01 14:00	03/20/02 11:20	WG49636	PREP FOR	1	09/26/01 12:	45 03/20/02	11:20 WG49755
FED ZN, 6010		09/25/01 14:00	03/20/02 11:20	WG49636	PREP FOR	1	09/26/01 12:	45 03/20/02	11:20 WG49755
_ab ID:0109280	3-3	Client ID	A-02-D-01 (M)	· Co	llect Date: 09/	21/01/12:0	5 Rec	eive Date:09/	21/01:17:15
MOIST						1	09/24/01 11:	51 09/28/01	12:05 WG49582
ED CR, 6010		09/25/01 14:00	03/20/02 12:05	WG49636	PREP FOR	1	09/26/01 13:	02 03/20/02	12:05 WG49755
ED CU, 6010		09/25/01 14:00	03/20/02 12:05	WG49636	PREP FOR	1	09/26/01 13:	02 03/20/02	12:05 WG49755
FED PB, 6010		09/25/01 14:00	03/20/02 12:05	WG49636	PREP FOR	1	09/26/01 13:	02 03/20/02	12:05 WG49755
ED ZN, 6010		09/25/01 14:00	03/20/02 12:05	WG49636	PREP FOR	1	09/26/01 13:	02 03/20/02	12:05 WG49755
ab ID:01092803	3-4	Client ID	A-03-D-01 (M)	Ç.	llect Date:: 09//	21/01/11:4	5 ⊹ Rece	ive Date: 09/	21/01 17:15
_MO <u>LS</u> T						1	09/24/01 11:	51 09/28/01 ·	11:45 WG49582
R, 6010		09/25/01 14:00	03/20/02 11:45	WG49636	PREP FOR	1	09/26/01 13:	07 03/20/02	11:45 WG49755
ED CU, 6010		09/25/01 14:00	03/20/02 11:45	WG49636	PREP FOR	1	09/26/01 13:	07 03/20/02	11:45 WG49755
FED PB, 6010		09/25/01 14:00	03/20/02 11:45	WG49636	PREP FOR	1	09/26/01 13:	07 03/20/02	11:45 WG49755
ED ZN, 6010		09/25/01 14:00	03/20/02 11:45	WG49636	PREP FOR	1	09/26/01 13:	07 03/20/02 1	11:45 WG49755
Lab ID: 0109280	3-5	Client ID	A-04-D-01.(M)	NA Co	illect Date: 09/2	21701:11:30	Rece	ive Date: 09/	21/01 17:15
MOIST						1	09/24/01 11:	51 09/28/01 1	11:30 WG49582
ED CR, 6010		09/25/01 14:00	03/20/02 11:30	WG49636	PREP FOR	1	09/26/01 13:	12 03/20/02 1	11:30 WG49755
FED CU, 6010		09/25/01 14:00	03/20/02 11:30	WG49636	PREP FOR	1	09/26/01 13:	12 03/20/02 1	11:30 WG49755
ED PB, 6010		09/25/01 14:00	03/20/02 11:30	WG49636	PREP FOR	1	09/26/01 13:	12 03/20/02 1	11:30 WG49755
ED ZN, 6010		09/25/01 14:00	03/20/02 11:30	WG49636	PREP FOR	1	09/26/01 13:	12 03/20/02 1	11:30 WG49755

**QC SUMMARY** 

## PDC Laboratories Quality Control Summary Report

ROJECT: 01092803

MALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

C CROSS REFERENCE REPORT

<b>.</b> 	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
_	01092803-1	A-01-D-01 (M)	WG49636	WG49755	26-Sep-01 11:26	DWK	SW6010B
,	01092803-2	A-01-D-02 (M)	WG49636	WG49755	26-Sep-01 12:45	DWK	SW6010B
	01092803-3	A-02-D-01 (M)	WG49636	WG49755	26-Sep-01 13:02	DWK	SW6010B
	01092803-4	A-03-D-01 (M)	WG49636	WG49755	26-Sep-01 13:07	DWK	SW6010B
	01092803-5	A-04-D-01 (M)	WG49636	WG49755	26-Sep-01 13:12	DWK	SW6010B

### ETHOD BLANK

aboratory ID: WG49636-1 Analysis Lot: WG49755 Prep Batch: WG49636 Sample Tag:

Analyte	Units	Value	RDL	Analysis Date
Chromium	MG/KG	2.00	2.0	26-Sep-01 09:43
Copper	MG/KG	5.00	5.0	26-Sep-01 09:43
Lead	MG/KG	0.600	0.60	26-Sep-01 09:43
Zinc	MC / KC	4 011	4 0	26-Sep-01 09.43

## LABORATORY CONTROL SAMPLE

Laboratory ID: WG49636-2 Analysis Lot: WG49755 Sample Tag:

4	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis I	ate
	Chromium	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01 (	09:48
	Copper	MG/KG	25.0	25.0	100	80.0-120	26-Sep-01 0	)9:48
	Lead	MG/KG	25.0	24.0	98.0	80.0-120	26-Sep-01 0	9:48
	Zinc	MG/KG	25.0	24.0	96.0	80.0-120	26-Sep-01 0	9:48

### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

boratory IDs: WG49636-6, WG49636-7 Analysis Lot: WG49755 Sample Spiked: 01092803-1 Site: A-01-D-01 (M) Sample Tag:

Analyte	Units	Amt MS Spiked	Amt MSD Spiked	Sample Value	MS Value	MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits
						<b>-</b>					
Chromium	MG/KG	500	500	32	480	490	89.0	91.0	75.0-125	2.08	20.0
Copper	MG/KG	500	500	3.4	450	470	89.0	93.0	75.0-125	4.34	20.0
Lead	MG/KG	500	500	31	480	500	90.0	93.0	75.0-125	3.49	20.0
Zinc	MG/KG	500	500	54	490	500	88.0	88.0	75.0-125	0.00	20.0

### ABORATORY DUPLICATE

boratory ID: WG49636-8 Duplicate Sample: 01092803-1 Analysis Lot: WG49755

	Analyte	Units	Measured	Replicate	RPD	Limits	Analysis Date
í	Chromium	MG/KG	32	36	11.8	20.0	26-Sep-01 12:26
ı	Copper	MG/KG	3.4	3.8	11.1	20.0	26-Sep-01 12:26
	Lead	MG/KG	31	33	6.25	20.0	26-Sep-01 12:26
	Zinc	MG/KG	54	59	8.85	20.0	26-Sep-01 12:26

Page : 1 26-Oct-2001 13:10

ROJECT: 01092803

NZS ANALYSIS (SW6010) AND PREPARATION (SW3051)

NITIAL CALIBRATION VERIFICATION

### INITIAL CALIBRATION VERIFICATION

						_	
Laboratory	ID:	WG49755-1	Analysis	Lot:	WG49755	Sample	Taq:

<b>.</b>	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Chromium	UG/ML	4.0	3.9	97.5	90.0-110	26-Sep-01 09:14
	Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 09:14
	Lead	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 09:14
2	Zinc	UG/ML	4.0	3.9	97.5	90.0-110	26-Sep-01 09:14

#### INITIAL CALIBRATION BLANK

poratory	ID:	WG49755-2	Analysis	Lot:	WG49755
DOTOLOTY	± D .	11042733 E	TAIGE JULI	LUC.	1043/23

Analyte	Units	Value	RDL	Analysis Date
Chromium	PPB	2.00	2.0	26-Sep-01 09:22
Copper	PPB	5.0U	5.0	26-Sep-01 09:22
Lead	PPB	0.600	0.60	26-Sep-01 09:22
Zinc	PPB	4.0U	4.0	26-Sep-01 09:22

## NTINUING CALIBRATION BLANK

chornery II	D: WG49755-10	Analy	sis Lot: WG4		
	Analyte	Units	Value	RDL	Analysis Date
	Chromium	UG/ML	2.00	2.0	26-Sep-01 11:41
	Copper	UG/ML	5.0U	5.0	26-Sep-01 11:41
	Lead	UG/ML	0.60U	0.60	26-Sep-01 11:41
	Zinc	UG/ML	4.0U	4.0	26-Sep-01 11:41

Laboratory	ID:	WG49755-13	Analysis	Lot:	WG49755

Analyte	Units	Value	RDL	Analysis Date
Chromium	UG/ML	2.00	2.0	26-Sep-01 12:55
Copper	UG/ML	5.0U	5.0	26-Sep-01 12:55
Lead	UG/ML	0.60U	0.60	26-Sep-01 12:55
Zinc	UG/ML	4.0U	4.0	26-Sep-01 12:55

Laboratory ID: WG49755-16 Analysis Lot: WG49755

Analyte	Units	Value	RDL	Analysis Date
Chromium	UG/ML	2.00	2.0	26-Sep-01 13:58
Copper	UG/ML	5.0U	5.0	26-Sep-01 13:58
Lead	UG/ML	0.600	0.60	26-Sep-01 13:58
Zinc	UG/ML	4.0U	4.0	26-Sep-01 13:58

Laboratory ID: WG49755-7 Analysis Lot: WG49755

Analyte Units Value RDL Analysis Date

Page : 2 26-Oct-2001 13:10

### PDC Laboratories Quality Control Summary Report

ROJECT: 01092803

## Ls analysis (sw6010) and preparation (sw3051)

ONTINUING CALIBRATION BLANK

Laboratory ID: WG49755-7 Analysis Lot: WG49755 Sample Tag:

	Analyte	Units	Value	RDL	Analysis Date
	Chromium	UG/ML	2.00	2.0	26-Sep-01 10:35
=	Copper	UG/ML	5.0U	5.0	26-Sep-01 10:35
	Lead	UG/ML	0.600	0.60	26-Sep-01 10:35
ł	Zinc	UG/ML	4.0U	4.0	26-Sep-01 10:35

#### INTERFERENCE CHECK SAMPLE - A

boratory ID: WG49755-3 Analysis Lot: WG49755

Analyte	e Units	Spiked	Measured	*Recovery	Limit	s Da	.te
Chromium	n UG/ML	0.0	-0.00078	N/A	N/A	26-Sep-01 09:27	
Coppe	UG/ML	0.0	-0.0042	N/A	N/A	26-Sep-01 09:27	
Lead	1 UG/ML	0.0	-0.0014	N/A	N/A	26-Sep-01 09:27	
Zin	UG/ML	0.0	-0.013	N/A	N/A	26-Sep-01 09:27	

## TTERFERENCE CHECK SAMPLE - AB

Deporatory ID: WG49755-4 Analysis Lot: WG49755

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	0.50	0.48	96.2	80.0-120	26-Sep-01 09:32
Copper	UG/ML	0.50	0.55	110	80.0-120	26-Sep-01 09:32
Lead	UG/ML	0.050	0.047	93.8	80.0-120	26-Sep-01 09:32
Zinc	UG/ML	1.0	0.93	93.0	80.0-120	26-Sep-01 09:32

## ONTINUING CALIBRATION VERIFICATION

Laboratory ID: WG49755-12 Analysis Lot: WG49755 Sample Tag:

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
	Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50
_	Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 12:50
1	Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 12:50

Laboratory ID: WG49755-15 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54
Copper	UG/ML	. 4.0	4.0	100	90.0-110	26-Sep-01 13:54
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 13:54
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 13:54

oratory ID: WG49755-6 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 10:30
Lead	UG/ML	4.0	4.1	102	90.0-110	26-Sep-01 10:30
Zinc	UG/ML	4.0	4.0	100	90.0-110	.26-Sep-01 10:30

Page : 3 26-Oct-2001 13:10

## PDC Laboratories Quality Control Summary Report

ROJECT: 01092803

## ALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

ONTINUING CALIBRATION VERIFICATION

Laboratory ID: WG49755-9 Analysis Lot: WG49755 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Copper	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Lead	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36
Zinc	UG/ML	4.0	4.0	100	90.0-110	26-Sep-01 11:36

## POST DIGESTION SPIKE

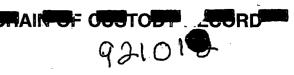
Daboratory ID: WG49755-14 Analysis Lot: WG49755

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium	UG/ML	5.00	5.1	103	75.0-125	26-Sep-01 13:17
Copper	UG/ML	5.00	5.0	100	75.0-125	26-Sep-01 13:17
Lead	UG/ML	5.00	5.2	104	75.0-125	26-Sep-01 13:17
Zinc	UG/ML	5.00	5.3	106	75.0-125	26-Sep-01 13:17

SHIPPING & RECEIVING

PHONE # 309-692-9688 FAX # 309-692-9689





ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)												
ADDRESS SOID STONE MILL ROND	PROJECT NI 19118 ·		P.O. NUMBE	ER	PICIL-		3	ANA	LYSIS	REQUESTE	D	(FOR LAB USE ONLY)  4 0109 2803-5  LOGIN # 01092804-5  LOGGED BY: #I
ADDRESS	PHONE NU	ABER (	FAX NUMBE	ER	DATE SI		$\overline{}$		E	T	<u> </u>	LOGIN # 01092804-5
5010 5:0NE Mill ROND	812-336-0972				9-21-01		Saray CAED		US			
CITY	SAMPLER (PLEASE PRIN	m. · · ·		. [	MATRIX TYPES:		10	7	וגי			LAB PROJ. #
STATE Blooming TON, IN 47404	JAD /				WW-WASTEWATER DW-DRINKING WATER			TROUSE	4		i	TEMPLATE:
CONTACT PERSON	SAMDI EDIS				GW-GROUND WWSL-SLUDG	WATER	<b>₩</b>	12	ā,			PROJ. MGR.:
BOB ATEN	SIGNATURE	Duw	lus		OTHER: 5ED		E70L5		mon			
SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED	SAMPLE GRAB	TYPE COMP	MATRIX TYPE	TOTAL # OF CONT	N. C.	ME	00			ENST PONO
	Andrew Mary	3345 TE	2.7 (2)			1 1 2 1 1 1 1		1		+		EXTRA VOLUR FOR
A-01-D-01 (m)	9-21-01		×		SED	2		_	_			ms/ms0
A-01-0-02(~)	9-21-01	11:20	X		5 <b>≥</b> 9	1		_	_	11	-	
A-02-0-01 (M)	9-21-01	12:05	×		5=3							<u></u>
A-03- D-0) (m)	9-21-01	11:45	X		SED	1						
A-04-D-01 (m)	9-21-01	11.30	X		SED	1						
A-05-W-01 (m)	9-21-01	11:00	×		WIR	2						MS/MSD. En
A-5-W-02 (m)	9-21-01	11:15	X		WIZ	1						
A-6-W-01 (K)	9-21-01	11:45	×		WIZ	1						
ARB-0-01 (m)	9-21-01		×		wir	1					-	
ARB-W-01 (m)	9-21-01	1	X		win	1						
					<del></del>				_			
TURNAROUND TIME REQUESTED (PLEASE CIRCLE)  (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)	RMAL	RUSH	<del> !</del>	<del></del>	6							at the lab. By initialing seeding with analysis, if
RUSH RESULTS VIA (PLEASE CIRCLE) FAX	(	PHONE				the sample	tempe:	rature is	s outsid	e of the rang	ge of 0.1-6.	0°C. By not initialing sting regardless of the
FAX # IF DIFFERENT FROM ABOVE: PHONE # IF DIFFE	RENT FROM ABOVE:					sample tem			U (U pre		nalylical les	· ·
RELINQUISHED BY: (SIGNATURE)  DA  7	TE RECEIVE	ED BY: (SIGNATU	JRE)				Di	ATE	8	`	MMENTS: (F	FOR LAB USE ONLY)
	AE I						TI	ME		ノ		
RELINGUISHED BY: (SIGNATURE) DA	70 BECEIV	ED AT LAB BY: (	SIGNATURE				-	ATE /	SAF	 IPLE TEMPI	ERATURE (	JPON RECEIPT C
TILLING DI. (SIGNATURE)	necelv	LO AT CAB GIT (	) —		4	1	9	ולובל	V∥SAI	IPLE(S) RE(	CEIVED ON	PRIOR TO RECEIPT (YOR N
, TII	AE /	1	L	. ^		/	1	IME 112	- BO	TLES FILLE	D WITH AL	OOD CONDITION (7) DR N DEQUATE VOLUME (7) OR N HIN HOLD TIME(S) (7) DR N
		יועד	<u>~ /</u>	I)	WOU		$\mathcal{L}_{I}$	<u>در،</u>				micros (micro)

## PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section.

elivery Method:	Drop Off	Commerical	Carrier (UPS, F	FEDEX, etc.)		Laboratory Pick-Up
Project	<del></del>		Cooler	<u> </u>	2	
	1 1 .			Container#		
Received (date time)	9/21/01	17/5		By: _	Pt Lew	o-ll
Opened (If different)		<del></del>	<del></del>	By: _		<u></u>
Preliminary Examin	ation Checklist					
Did the shipping cont	& air bill #:		oing slip?			YES NO (
Place any shipping d	ocumentation in fil	le folder)				
Were custody seals or	the outside of the	shipping con	tainer?		•••••	. (YES) NO*
If YES, a: Were the ci	ustody seals intact	upon arrival?.				YES NO*
b: Enter the S	eal Date and Name	e (enter "NA"	if not availab	ole): <u>9/2</u>	1	
Was the Chain of Cus	tody (COC) docum	nentation prov	ided with the	shipment?		. YES NO*
If YES, a: Was the CO	OC fully executed i					
	921012	-				
	oject identifiable fr					
	was this determin					
d: Was the CO	OC properly signed	as received b	y the Laborato	o <b>ry</b>	••••••	YES NO*
hat was the tempera	ture in the Cooler?	° Deg	C.			
Were samples receive				••••••		. YES (NO*)
	ater/Wastewater ar					
Oid the cooler contain	Ice?		-	••••••		. <b>(</b> EŚ) NO*
Sample Examination	& Check-In Che	<u>cklist</u>				
Were samples package	ed in conformance	to generally a	ccepted practi	ces?	••••••••	YES NO*
Did all sample contain	erc arrive intact an	ıd sealed?				VEC NO*
Did all sample contain						. ZES NO*
	ainers possessed ta				••••••••	
Were caps of individuation						YES NO*
Did all labels and/or ta						
on all laucis allwul la	iga agree with COC	٠ :		*****************	****	1123 140
Were QC samples incl	uded?	•••••		•••••	••••••••	YES NO
Oid pH checks confirm	n indicated preserv	ations? (if an	olicable)			YES NO
Did volumes, containe	•	` .	•			YES NO*
Were VOA vials (wate						
f any NO*, Proceed w	vith Login (YES / 1	NO) Project	Manager:		_ Date:	
tails/Comments:						
tans/comments:						
·						

# Appendix M East Pond Surface Water Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01092804

November 7, 2001

Earth Tech

Project: East Pond/Waters

SDG #01092804

TABLE OF CONTENTS

## TABLE OF CONTENTS SDG #01092804

Case Narrative	01
Tabulated Results	04
Dates and Dilutions	Olo
QC Summary	
Shipping and Receiving	09

**CASE NARRATIVE** 



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

# CASE NARRATIVE - Earth Tech/Keystone

East Pond - Waters Project No. 19718.09

PDC Laboratories, Inc. received 5 water samples on September 21, 2001, with custody seals intact and in good condition. The sample set was designated as sample delivery batch 01092804 for total metals.

Sample	e Id's	Date				
Field	Lab	Collected	Received			
A-05-W-01 (M)	01092804-1	09/21/01	09/21/01			
A-05-W-02 (M)	01092804-2	09/21/01	09/21/01			
A-06-W-01 (M)	01092804-3	09/21/01	09/21/01			
ARB-D-01 (M) 01092804-4		09/21/01	09/21/01			
ARB-W-01 (M)	01092804-5	09/21/01	09/21/01			

# **Project Summary**

These samples were prepared and analyzed in accordance with EPA approved Methodology for Earth Tech/ Keystone by the following methods: Total Metals by EPA Method 200.8.

# Metals QC Summary

All holding time criteria were met for all samples.

All Initial Calibration Verification and Continuing Calibration Verification Standards met method acceptance criteria.

All Method Blanks, Initial Calibration Blanks and Continuing Calibration Blanks were free of contamination for target analytes above report limits.

The associated Matrix Spike and Matrix Spike Duplicate was performed on sample 01092804-3 for the total metal analyses. All recoveries were within the specified QC limits.

All associated Laboratory Control Sample (LCS) recoveries were within QC acceptance criteria. All recoveries were within the method specified QC recovery limits.

All Interference Check Samples were within QC criteria.





P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9689 • (800) 752-6651 • FAX (309) 692-9689

## Certification

This data package is in compliance with the technical intent of Earth Tech's contract, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Signature:	Barliara Beard	Name: Barbara Beard	
Date:	November 7, 01	Title: Project Manager	

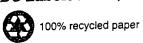
EAR01092804.DOC



# PDC Laboratories, Inc. DATA QUALIFIERS

Α	The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
С	The batch control sample failed to meet the required acceptance criteria.
E	Concentration exceeds the instrument calibration range.
F	Internal standard area failed to meet the required acceptance criteria.
G	The Method of Standard Additions (MSA) was used to quantify the concentration.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
K	The relative standard deviation (RSD) was%, which failed to meet the acceptance criteria of% for initial calibration. The mean %RSD for all analytes included in the calibration was%, which is within the acceptance criteria.
L	The percent difference (%D) was%, which failed to meet the acceptance criteria of% for continuing calibration verification. The mean %D for all analytes included in the continuing calibration was%, which is within the acceptance criteria.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
P	Chemical preservation discrepancy noted at the time of analysis.
Q	Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
R	Analyte failed to meet the required acceptance criteria for duplicate recovery in the Matrix Spike/Matrix Spike Duplicate (MS/MSD).
s	Surrogate compound diluted below a reliable quantitation level.
Τ	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery outside of the required acceptance criteria on this second analysis. Results should be interpreted as estimated concentrations.
V	Verification standard recovery failed to meet the required acceptance criteria.
W	Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
NA	Not analyzed.
NR	Not requested.
X	Miscellaneous; see comments.

PDC Laboratories, Inc.



TABULATED RESULTS



		ry Sample No.: ent Description:	01092804-1 205746	01092804-2 205746	01092804-3 10 <u>/2</u> 3/ <mark>/</mark> 01
	5.1.2	Site/Locator:	A-05-W-01 (M)	A-05-W-02 (M)	A-06-W-01 (M)
		Date Collected:	21-SEP-01 11:00:00	21-SEP-01 11:15:00	21-SEP-01 11:45:00
Method	Parameter	•	undiluted	undiluted	undiluted
EPA 200.8	Chromium	mg/l	0.018	0.018	0.02
EPA 200.8	Copper	mg/l	0.0022 J	0.0017 J	0.0023 J
EPA 200.8	Lead	mg/l	0.017	0.016	0.05
EPA 200.8	Zinc	mg/l	0.0091 J	0.0088 J	0.012 J

	Clien	y Sample No.: It Description: Site/Locator: Date Collected:	01092804-4 205746 ARB-D-01 (M) 21-SEP-01 10:10:00	01092804-5 205746 ARB-W-01 (M) 21-SEP-01 10:10:00
Method	Parameter		undiluted	undiluted
EPA 200.8	Chromium	mg/l	0.00038 J	0.00028 J
EPA 200.8	Copper	mg/l	0.025 U	0.00036 J
EPA 200.8	Lead	mg/l	0.003 U	0.003 U
EPA 200.8	Zinc	ma/l	0 0023 J	0 0017 J

PDC Laboratories participates in the following laboratory accreditation/certification or proficiency programs. Endorsement by the Federal and State Government or their agencies is not implied.

State of Illinois Chemical Analysis in Drinking Water Certified Lab. No. 100230

This report shall not be reproduced, except in full, without written approval of the laboratory.

10/23/01

DATES & DILUTIONS REPORT

0-23-01 13:31		PDC I	_aboratories, Inc.					Page 1	l
	Dil. Factor	Measure Dat	Hold Date	Batch ID	Assoc.Code	Dil. Factor	Analysis Dat	Analyis Hold Date	Analysis Batch
_ab ID: >>> 01092804	1	Client ID	A-05-W-01 (M)	Co	llect Date: 109/	21/01:11:00	Rec	ive Date:09/21/	71-17:15
FED CR, 200.8			03/20/02 11:00	WG50199	PREP FOR	1	09/27/01 10:	57 03/20/02 11:0	0 WG50237
FED CU, 200.8			03/20/02 11:00	WG50199	PREP FOR	1	09/27/01 10:	57 03/20/02 11:0	0 WG50237
ED PB, 200.8			03/20/02 11:00	WG50199	PREP FOR	1	09/27/01 10:	57 03/20/02 11:0	0 WG50237
FED ZN, 200.8			03/20/02 11:00	WG50199	PREP FOR	1	09/27/01 10:	57 03/20/02 11:0	0 WG50237
ab ID: 01092804-	<b>2</b>	Client ID	A-05-W-02 (M)	Co	llect:Date:::09/	21/01 11 13	5 - Rece	ive Date: 09/21/0	n 17:15
ED CR, 200.8			03/20/02 11:15	WG50199	PREP FOR	1	09/27/01 10:	36 03/20/02 11:1	5 WG50237
FED CU, 200.8			03/20/02 11:15	WG50199	PREP FOR	1	09/27/01 10:	36 03/20/02 11:1	5 WG50237
ED PB, 200.8			03/20/02 11:15	WG50199	PREP FOR	1	09/27/01 10:	36 03/20/02 11:1	5 WG50237
ED ZN, 200.8			03/20/02 11:15	WG50199	PREP FOR	1	09/27/01 10:	36 03/20/02 11:1	5 WG50237
Lab ID: 01092804-	3/ <sub>2-1-7</sub> /2-7	Client ID 7	A-06-W-01.(M)	<i>∞.</i> 'Co	llect Date:⊸09/	21/01 11:45	Rece	ive Date: : 09/21/0	1-17:15
ED CR, 200.8			03/20/02 11:45	WG50199	PREP FOR	1	09/27/01 10:	11 03/20/02 11:4	5 WG50237
PÉD CU, 200.8			03/20/02 11:45	WG50199	PREP FOR	1	09/27/01 10:	11 03/20/02 11:4	5 WG50237
FED PB, 200.8			03/20/02 11:45	WG50199	PREP FOR	1	09/27/01 10:	11 03/20/02 11:4	5 WG50237
ED ZN, 200.8			03/20/02 11:45	WG50199	PREP FOR	1	09/27/01 10:	11 03/20/02 11:4	5 WG50237
ab ID: 01092804	<b>4</b> , , , , , , , , , , , , , , , , , , ,	∵ Client ID /	ARB-D-01 (M)==		llect.Date:⊴09//	21/01.10:10	). Rece	ive Date: 09/21/0	17/15
EED CR, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:4	7 03/20/02 10:1	0 WG50237
ED CU, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:4	7 03/20/02 10:1	0 WG50237
FED PB, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:4	7 03/20/02 10:1	0 WG50237
EED-ZN, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:4	7 03/20/02 10:1	0 WG50237
01092804	5,5,5%,5%	Client-ID	ARB-W-01 (M).	Col	lect Date: :09/2	21/01/10:10	), , Rece	ive Date:⊸ 09/21/0	1/17:15
FED CR, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:	52 03/20/02 10:1	WG50237
ED CU, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:5	03/20/02 10:1	WG50237
ED PB, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:5	62 03/20/02 10:10	WG50237
FED ZN, 200.8			03/20/02 10:10	WG50199	PREP FOR	1	09/27/01 10:5	62 03/20/02 10:10	WG50237
_									
i e									

QC SUMMARY

## PDC Laboratories Quality Control Summary Report

RO<u>JE</u>CT: 01092694

TALS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

CROSS REFERENCE REPORT

				and the second s			
j 	Lab ID	Client ID	Prep. Lot	Analysis Lot	Analysis Date	Analyst	Method Sample Tag
	01092694-1	T-TL-1-G-01 (M)	WG50195	WG50239	26-Sep-01 13:09	JTM	EPA 200.8
	01092694-2	T-TL-2-G-01 (M)	WG50195	WG50239	26-Sep-01 13:14	JTM	EPA 200.8
i .	01092694-3	T-TL-3-G-01 (M)	WG50195	WG50239	26-Sep-01 13:41	JTM	EPA 200.8
•	01092694-4	T-TL-3-G-02 (M)	WG50195	WG50239	26-Sep-01 13:19	JTM	EPA 200.8
	01092694-5	T-TL-4-G-01 (M)	WG50195	WG50239	26-Sep-01 13:25	JTM	EPA 200.8
•	01092694-6	TW-7-G-01 (M)	WG50195	WG50239	26-Sep-01 13:30	JTM	EPA 200.8
Ì	01092694-7	TFB-G-01 (M)	WG50195	WG50239	26-Sep-01 13:35	JTM	EPA 200.8
)	01092694-8	TRB-S-01 (M)	WG50195	WG50239	26-Sep-01 14:07	JTM	EPA 200.8

#### METHOD BLANK

Laboratory ID: WG50195-1 Analysis Lot: WG50239 Sample Tag: WG50195

Units	Value	RDL	Analysis Date
MG/L	0.0100	0.010	26-Sep-01 13:03
MG/L	0.0050U	0.0050	26-Sep-01 13:03
MG/L	0.0042J	0.020	26-Sep-01 13:03
MG/L	0.00500	0.0050	26-Sep-01 13:03
MG/L	0.0030U	0.0030	26-Sep-01 13:03
	MG/L MG/L MG/L MG/L	MG/L 0.010U MG/L 0.0050U MG/L 0.0042J MG/L 0.0050U	MG/L 0.010U 0.010 MG/L 0.0050U 0.0050 MG/L 0.0042J 0.020 MG/L 0.0050U 0.0050

#### LABORATORY CONTROL SAMPLE

oratory ID: WG50195-2 Analysis Lot: WG50239 Sample Tag:

L	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Chromium	MG/L	5.55	5.60	101	85.0-115	26-Sep-01 14:12
l	Nickel	MG/L	5.55	5.40	97.3	85.0-115	26-Sep-01 14:12
	Zinc	MG/L	5.55	5.60	101	85.0-115	26-Sep-01 14:12
l	Cadmium	MG/L	5.55	5.40	97.3	85.0-115	26-Sep-01 14:12
1	Lead	MG/L	5.55	5.60	101	85.0-115	26-Sep-01 14:12

#### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

oratory IDs: WG50195-3, WG50195-4 Analysis Lot: WG50239 Sample Spiked: 01092694-3 Site: T-TL-3-G-01 (M) Sample Tag:

	Analyte	Units		Amt MSD Spiked	•	MS Value	MSD Value	MS % Rec	MSD % Rec	Rec Limits	RPD	RPD Limits
	Chromium	MG/L	5.5	5.5	0.0066	5.6	5.6	95.5	95.5	70.0-130	0.00	20.0
	Nickel	MG/L	5.5	5.5	0.0064	5.3	5.4	90.3	92.1	70.0-130	1.97	20.0
_	Zinc	MG/L	5.5	5.5	0.025	5.6	5.7	80.6	82.4	70.0-130	2.21	20.0
	Cadmium	MG/L	5.5	5.5	0.00500	5.4	5.4	97.3	97.3	70.0-130	0.00	20.0
	Lead	MG/L	5.5	5.5	0.0088	5.6	5.7	93.8	95.6	70.0-130	1.90	20.0

#### CONTINUING CALIBRATION BLANK

Laboratory ID: WG50239-10 Analysis Lot: WG50239

<b>4</b>	Analyte	Value	RDL	Analysis Date
	Chromium Nickel	0.010U 0.0050U	0.010	26-Sep-01 14:24 26-Sep-01 14:24

Page : 1 23-Oct-2001 13:10

## PDC Laboratories Quality Control Summary Report

ROJECT: 01092694

ALS ANALYSIS (EPA 200.8) AND PREPARATION (SW3051)

ONTINUING CALIBRATION BLANK

	Laboratory ID	: WG50239-10,	WG50195-4 Analysis	Lot: WG50239	Sample Tag: 01092694-3	T-TL-3-G-01 (M)	Sample Tag:
--	---------------	---------------	--------------------	--------------	------------------------	-----------------	-------------

Analyte Analyte			RDL Analysis piked Value		Value	% Rec	% Rec	Limits	RPD	Limits	RPD
Zinc Cadmium Lead	MG/L MG/L MG/L	0.00017J 0.0050U 0.0030U	0.0050	26-Sep-01 26-Sep-01 26-Sep-01	14:24						

Laboratory ID: WG50239-2 Analysis Lot: WG50239

	Analyte	Units	Value	RDL	Analysis Date
	Chromium	MG/L	0.0100	0.010	26-Sep-01 11:11
	Nickel	MG/L	0.00500	0.0050	26-Sep-01 11:11
1	Zinc	MG/L	-5.2e-05J	0.020	26-Sep-01 11:11
	Cadmium	MG/L	0.00500	0.0050	26-Sep-01 11:11
	T.e.a.đ	MC: /T.	0.003011	0.0030	26-Sep-01 11:11

Laboratory ID: WG50239-6 Analysis Lot: WG50239

Analyte	Units	Value	RDL	Analysis Date
Chromium	MG/L	0.010U	0.010	26-Sep-01 12:55
Nickel	MG/L	0.0050U		26-Sep-01 12:55
Zinc	MG/L	0.00020J	0.020	26-Sep-01 12:55
Cadmium	MG/L	0.0050U	0.0050	26-Sep-01 12:55
Lead	MG/L	0.0030U	0.0030	26-Sep-01 12:55

aboratory ID: WG50239-8 Analysis Lot: WG50239

		 Analyte	Units	Value	RDL	Analysis Date
	 	 Chromium	MG/L	0.0100	0.010	26-Sep-01 14:03
		Nickel	MG/L	0.00500	0.0050	26-Sep-01 14:03
ı		Zinc	MG/L	0.00020J	0.020	26-Sep-01 14:03
l		Cadmium	MG/L	0.00500	0.0050	26-Sep-01 14:03
•		Lead	MG/L	0.0030U	0.0030	26-Sep-01 14:03

TTERFERENCE CHECK SAMPLE - A

Laboratory ID: WG50239-3 Analysis Lot: WG50239

Analyte	Units	Spiked	Measured	*Recovery	Limits	Date
Chromium Nickel	MG/L MG/L	0.0	0.00076	N/A N/A	N/A 26-Sep-01 N/A 26-Sep-01	11:41
Zinc Cadmium Lead	MG/L MG/L MG/L	0.0 0.0 0.0	0.0036 -6.9e-05 0.00029	N/A N/A N/A	N/A 26-Sep-01 N/A 26-Sep-01 N/A 26-Sep-01	11:41

TTERFERENCE CHECK SAMPLE - AB

Laboratory ID: WG50239-4 Analysis Lot: WG50239

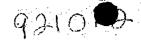
Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
Chromium Nickel	MG/L MG/L	0.050	0.052		80.0-120 80.0-120	26-Sep-01 11:47 26-Sep-01 11:47
Zinc	MG/L	0.10	0.10	99.6	80.0-120	26-Sep-01 11:47
Cadmium Lead	MG/L MG/L	0.10 0.0050	0.097 0.0056		80.0-120 80.0-120	26-Sep-01 11:47 26-Sep-01 11:47

Page : 2 23-Oct-2001 13:10

**SHIPPING & RECEIVING** 

PHONE # 309-692-9688 FAX # 309-692-9689





ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

CLIENTING THE STATE OF THE STAT	PROJECT NO	JMBER	P.O. NUME		MEANS S			<u> </u>					(FOR LAB USE ONLY)
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1-05-60-01 (m)	92101	11:00	•<		WTR	2							EXTAD VOL. For
A-5-10-02 (m)	9-21-01	11:15	. <		1052	1				·			
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RUSH RESULTS VIA (PLEASE CIRCLE) FAT		PHONE		·		the sample	tempe	rature i	is outsi	ide of the	range	of 0.1-6.	0°C. By not initialing sting regardless of the
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# PDC Laboratories, Inc. – Federal Services SAMPLE RECEIPT FORM

All No responses are to be described in the Details/Comments Section.

elivery Method:	Drop Off	Commerical	Carrier (UPS,	FEDEX, etc.)		Laboratory Pick-Up
Project			Cooler	$Q_{\text{of}}$	2	
Troject				Container #	(PDC / Othe	r):
Received (date time)	9/21/01	17/5				
Opened (If different)	1, 1			By: _		
Preliminary Examin	ation Checklist					
Did the shipping cont	& air bill #:		•			YES NO NA
(Place any shipping de	ocumentation in f	le folder)				
Were custody seals or If YES, a: Were the cu b: Enter the S		upon arrival?.		••••••		YES NO* YES NO*
Was the Chain of Cus If YES, a: Was the CO b: COC #: c: Was the pro If No, how		in ink by the strom the COC?	hipper?			YES NO* YES NO*
d: Was the CC	OC properly signe					(YES) NO*
at was the temperature samples received (Processed Was Did the cooler contain Sample Examination	d within criteria o ater/Wastewater a Ice?	f 2-6° Deg C?. re excluded fro	om the tempe	rature criteri	a)	YES NO*
Were samples package		<del>-</del>	ccepted prac	tices?		YES NO*
Did all sample contain	ers arrive intact a	nd sealed?				VES NO*
Did all sample contain	ers have secure an ainers possessed to al bottles/vials fre	nd completed la ags, circle: The from tape and	abels? ags only Td/or custody	ags + Labels seals?		YES NO* YES NO*
Were QC samples incl	uded?	•••••	·····	••••••	••••	YES NO
Did pH checks confirm Did volumes, containe Were VOA vials (water	rs, & preservative	s seem approp	riate to indica	ate tests?		YES NO (NA) YES NO* (NA) YES NO* (NA)
If any NO*, Proceed w	ith Login (YES /	NO) Project	Manager:		_ Date:	<del></del>
Details/Comments:						

# Appendix N Oil Skimmer Basin Sediment & Influent Water Data Report

PDC Laboratories, Inc.

Report for Sample Delivery Group #01093292



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

#### Report Cover Page

Barth Tech 5010 Stone Mill Road

Bloomington, IN 47401

Attn: Mr. Bob Aten

Date Received: 28-Sep-01 Date Reported: 19-Oct-01

PO #:

PDC Cust. # : 205746

Login No. 01093292

This report includes information regarding the following described samples as received by the laboratory and is only valid for the parameters tested. This report contains 2 results page(s) not including the cover page(s).

OTE SKIMDER BASIN GRAB

uple you CESPAY in Sign Toron Toron

Certified by:

Kurt C. Stepping Director of Client Services

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State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17533

State of Arkansas Certified Wastewater and Hazardous Waste Lab

State of Indiana Certified Drinking Water Lab No. C-IL-04

te of Iowa Certified Wastewater Lab No. 240

American Industrial Hygiene Association Bulk/Air Asbestos Proficiency Program Lab ID No. 101206

State of North Dakota Wastewater and Hazardous Waste CertifiedLab No. R-094

State of Wisconsin Certified Wastewater and Hazardous Waste Lab ID No. 998294430

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## Laboratory Results

Earth Tech

5010 Stone Mill Road

Attn: Mr. Bob Aten

Bloomington, IN 47401

Date Received: 28-Sep-01

Date Reported: 19-Oct-01

PDC Cust. # : 205746

Login No. 01093292

Sample No:

Client ID:

01093292-1

Site:

OIL SKIMMER BASIN

Locator: GRAB

Collect Date: 28-SEP-01 09:00

90 ME				SECOND CONTRACTOR OF THE CONTR	Control and Company and Compan	(2000) (1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		aviolities colorate and the seast to	
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	Blochemical					mg/kg			
A CONTRACTOR OF THE PARTY OF	Biochemical	Oxygen Dema	nd		6700	mg/kg Dry	28-Sep-01	13:05	JAM
and the same of the	(F. 1122 C. 11					<b>/</b> 2			
×	Chemical Oxy	ygen Demand			160000	mg/kg	05-0ct-01		TAC
more and the	Chemical Os	Ader Demend	The first property of the control of		240000	mg/kg Dry	s ap-nac-au	115530	TAC
#	FTHOD 1664 Hexane Extra	TO THE PARTY OF TH	CONTRACTOR OF STREET	animana na	46000	and the second state of the second second second second second second second second second second second second	05-06 <del>6</del> -01	Street (#1800) #1840 #1860	ECH
	Hexane Extra			.1.10.7 (1.10.10.11)	67000	and the provider of the property of the provider of the provid	05-Oct-01	ALCOHOLOGICAL AND A STATE OF THE ACT OF THE	ECH
	Marco 2500 B	ictable Mate	rrar (urm)		67000	mg/kg Dry	03-066-01	13:00	ECR
		17			69.	<u>.</u>	02-Oct-01	10-53	DLE/JE
STATE OF	Solids, Tota	e e e e e e e e e e e e e e e e e e e			05.	79	02-000-01	19.33	DHE/UE
	Sample Prepa	eration		•			01-Oct-01	12.00	JEM
	6 yestelüle öös	(1) E					02 002 02	22.00	
- Tribilizado	Silver			<	0.10	mg/kg	02-Oct-01	09:30	JVH
\$3	Silver	y na pangangan kabupatèn kalangan kabupatèn kalangan kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupat Kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn Kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn kabupatèn	er i de lette en en en en en en en en en en en en en		0::14	mg/kg Diy			JVH
	Aluminum	and the state of t			340	mg/kg	02-Oct-01	,	JVH
2.3	Aluminum	том по померном поставления в поставления в поставления в поставления в поставления в поставления в поставления Ставления поставления в поставления в поставления в поставления в поставления в поставления в поставления в по	A control of the cont	en en en en en en en en en en en en en e	490	mg/kg-Dry	02-001-01	09:30	JVH
l "	Arsenic			<	0.70	mg/kg	02-Oct-01		JVH
33	Argonic	namananan lahilitetta ara-ahalla 1911, ' Tarihadi dipangganan ara-ana da kabupat Ara-anahanan papan da kabupatèn da kabupatèn da	<ul> <li>The second section of the section of the second section of the section of the second section of the se</li></ul>		1200	'mg/kg Dry	02÷0ct÷01	09:30	JVH
	Boron				3.6	mg/kg	03-Oct-01	07:30	JVH
_ 3	Roron	ng period and a company of the compa	and the following states of the property of the states of		5.2	mg/kg Dry	03+0ct=07	07:30	JVH
	Barium				15.	mg/kg	02-Oct-01		JVH
32	Barium		And the second s	with a second second second	22	mg/kg Dry			JVE
	Beryllium		•		6.7	mg/kg	02-0ct-01		JVH
	Beryllium	The second of th			9:7	mg/kg Dry	·		JVH
	Cadmium		•	<	0.10	mg/kg	02-Oct-01		JVH
	Cadmium	er hade hade were to a server to		·	0.14	wa√ka Diy	710 74 7		JVH
	Cobalt				19.	mg/kg	02-Oct-01		JVH
	Cobalt			• • • •	28	mg/kg Dry			JVH.
	Chromium				200	mg/kg	02-Oct-01		JVII
		e i igue e	•		29Ö·	mg/kg Dry			JVH
	Copper				1000	mg/kg	02-Oct-01	09:30	.TVH



P.O. Box 9071 - Peoria, IL 61812-9071 (309) 692-9688 - (800) 752-6651 - FAX (309) 692-9689

## Laboratory Results

Earth Tech

5010 Stone Mill Road

Bloomington, IN 47401

Attn: Mr. Bob Aten

Date Received: 28-Sep-01 Date Reported: 19-Oct-01

PO #:

PDC Cust. # : 205746

Login No. 01093292

Sample No: Client ID:

01093292-1

Site:

OIL SKIMMER BASIN

GRAB Locator:

Collect Date: 28-SEP-01 09:00

- Parameter	**************	P(S191)	makes	** *********			
lopper	ı	400 T	ng/kg	Dry	02-0ct-01	09:30	HVL
TOTAL	8	2000	a/ku	**************************************	02-0ct-01	09:30	JVE
Iron	4	50000 1	ng/kg	Drv	02-Oct-01	09:30	JVH
lagnesium	4	L Comment	ia / ka		02-06E-01	09-30	JVH
tagnesium	< 5:	90 n	g/kg	Drv	02-Oct-01	09:30	JVH
langanese		9.00	0760	BOOK SERVICE SERVICE	-02=0ct-01		JVH
langanese	2:		g/kg	Drv	02-Oct-01		HVL
olvodenum			to with a six or sail	Section Committee	02-06E-01		ĴУH
olybdenum	7.	A. M. A. A. Martin, Martin, M.	g/kg		02-0ct-01	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	JVH
	2			delicates full	02-0ct-01		
ickel					02-Oct-01	AND DESCRIPTION OF THE PROPERTY OF	HVL
			ıg/kg		02-0ct-01		
ead	Company of the compan	_		D	02-Oct-01		JVH
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elen lim		Bucco					JVH
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and the second of the second s	and the second s	and the second of the second o	9/259	rideren geschichten eine der eine der	02=0ct=01		TUVE
in	56 	<b>1</b>	g/kg	DIY	02-0ct-01	J.J:30	JVH
	THE PROPERTY OF THE PROPERTY OF THE				02-0ct-01	.09.30	JVH
itanium		<u> </u>	g/kg		02-0ct-01	handa a san da da da da da da da da da da da da da	JVH
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inc			g/kg	derlander of Spirital Standards and a series of the Standards and a series of the series of the Standards and a series of the se	02-0ct-01	09:30	JVH
inc	97	7. π	g/kg	Dry	02-Oct-01	09:30	HVU
METHOD: 74714							
ercury	< 0.	.020 π	g/kg		04-Oct-01	12:00	ERS



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Report Cover Page

Earth Tech

5010 Stone Mill Road

Bloomington, IN 47401

Attn: Mr. Bob Aten

Date Received: 09-Oct-01 Date Reported: 19-Oct-01

PO #:

PDC Cust. # : 205746

Login No. 01101807

This report includes information regarding the following described samples as received by the laboratory and is only valid for the parameters tested. This report contains 3 results page(s) not including the cover page(s).

iol807-1 WASTE WATER

CL #2

ample No. 100 Sent Domestin Street English English

GRAB

see Plan View in Appendix D for location,

1101807-2 WASTE WATER

CL #3

ČKVR:

CRAB Treatment Plant NPOES discharge

Certified by:

Kurt C. Stepping Pirector of Client Services

PDC Laboratorics participates in the following laboratory accreditation/certification and proficiency programs. Endorsement by the Federal or State Government or their agencies is not implied.

State of Illinois Chemical Analysis in Drinking Water Accredited Lab. No. 100230

State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17533

State of Arkansas Certified Wastewater and Hazardous Waste Lab

state of Indiana Certified Drinking Water Lab No. C-IL-04

talc of Iowa Certified Wastewater Lab No. 240

American Industrial Hygiene Association Bulk/Air Asbestos Proficiency Program Lab ID No. 101206

State of North Dakota Wastewater and Hazardous Waste CertifiedLab No. R-094

State of Wisconsin Certified Wastewater and Hazardous Waste Lab ID No. 998294430

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Laboratory Results

Earth Tech

5010 Stone Mill Road

Bloomington, IN 47401

Date Reported: 19-Oct-01

PO #:

PDC Cust. # : 205746

Date Received: 09-Oct-01

Attn: Mr. Bob Aten

Login No. 01101807

Sample No:

01101807-1 WASTE WATER

Client ID: Site:

CT, #2

Locator:

GRAB

Collect Date:

09-OCT-01 13:43

Farane			January Res		Habita St.	CECONALE COE	
Pierego 52 190	ã						
Biochemica	L Oxygen Demand	rancon de la companya	3.0	line of a second	ng/l	10-Oct-01	09:42 JAM
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_Selids Tot	al Dissolved	A Commence of the Commence of	670		ng/1	15-055-01	15.54 KMC/
EEOD:2546.	Ž						•
Sclies, Tol	al Suspended	2 (100 ppm 1 ) (10	5.0		ng/1	12-0ct-01	15:50 KB
MEDION:200.						Co. 100 the frame as to consider the	
Sample Pre	aration .	W 5145 m	The second secon			17-0ct-01	11:00 KJP
METEROPEZOS:		e al establica			99 <b>029</b> 11.0000000		
Arsenic		and the street of the	<	10		19-00E-02	08:27 CVC
-,		ing diaman	0.0		19/1	19-0ct-01 19-0ct-01	08:27 CVC
Barium	<ul> <li>Submission for WEAR (Control of the control</li> </ul>	,	0.0	40 6	ncr/1	19-Oct-01	08:27 CVC
Carlmium	e de la companya del companya de la companya del companya de la companya del la companya de la c		< 0.0	920	ng/1	19-Oct-01 19-Oct-01	08:27 CVC
Chromium	A CONTRACTOR OF THE CONTRACTOR	The state of the s	< 0.00	040 I	ng/l	19-001-01	
Copper	A series of the control of the contr	Action to the same of the	< 0.00	350 ·	19/1	19-0gE-01	06:27 CVC
Iron			0.4	7 π	ng/l	19-0ct-01	
		7. A. A. W.		71		T9-Qet-01	
Nickel			0.07		ng/l	19-0ct-01	
Lead					. •	19-Oct=01	Mar. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10
Selenium Zinc			< 0.05	A. a	Ng/l	19-Oct-01	Carlo Accas
METHODESAS	».		< 0.20%	лого п	ng/l	19-0ct-01	00327 GWG
Mercury	•	i	< 0:00	3020 n	na/1	7.2=0ct-01	10:00 ERS
			- 5.50			And the second s	



## PDC Laboratories, Inc.

P.O. Box 9071 • Peoria, II. 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

### Laboratory Results

Earth Tech 5010 Stone Mill Road

Bloomington, IN 47401

PO #:

PDC Cust. # : 205746

0.0060 mg/l 19-Oct+01 08:33 CVC

19-0ct-01 08:33

12-Oct-01 10:00 ERS

Date Received: 09-Oct-01

Date Reported: 19-Oct-01

Attn: Mr. Bob Aten

Login No. 01101807

Sample No: 01101807-2

Client ID: WASTE WATER

Site: CL #3

Locator: GRAB

Collect Date: 09-0CT-01 13:50

parameter		Result	United	Date	
AND THE STREET STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET,					
N-PERIOD TOTAL			N 1977 1		the state of the first
Biochemical Oxygen Demand	t daning proping of the Market of the Comments	3.0	mg/l	10+Oct-01	09:49 JAM
era medelde egg fra 1965 fragy 19					
Hexane Ext. Material (HEM)	y SPE <-	5,0	mg/l	17-0ct-01	11:00 BCH
BY METHOD AE COST HE / SN. BYE: 9040	23				
PH SM:METHOD: ZBACCC		8.22:	units	10-0ct-01	L1:23 KJB
SM: METHOD Z 5/40:00			· · · · · · · · · · · · · · · · · · ·	A section of biode-decay and a con-	111 C. Mariana Mariana (1997)
Spinds. Potal Dissolved		680	mg/l		15:54 KMC/JE
7500022548.00					
Solids Total Suspended	A Company of the Comp	.22	mg/1	12-0ct-01	15:50 KB
SPA NETHOD ZOOZ					
Sample: Preparation	A contract of the contract of			17-0ct-01	11:00 KJP
DEZ METHOR 200 7: TEV-454					
Silver		O DIO	mg/1	19-0ct-01	08-33 CVC
Arsenic	<	0.020	mg/l	19-0ct-01	
Boron	. See The super-	0.333	mg/l	19-0ct=01	08433 GAG
Barium		0.038	mg/l	19-Oct-01	
Cadmitim		0.0020	mg/l	190ct-01	08:33 CVC
Chromium	<	0.0040	mg/l	19-Oct-01	08:33 CVC
Coppex	The second second second second second second second second second second second second second second second s	0.025	mg/l	19-Oct-01	08:33 CVC
Iron		1.5	mq/l	19-Oct-01	
Menganese	And the second s	0.066	mg/l	19-Oct-01	08:33 CVC
%rck∈1		0.027	mg/l	19-Oct-01	08:33 CVC
<b>Lead</b>		Or Olo	mg/l	19-0ct-01	08-33 CVC
Selenium	<	0.050	mg/l	19-Oct-01	08:33 CVC

< 0.00020 mg/l

<

Selenium Zine Zip, METHOD Zesel Mercury